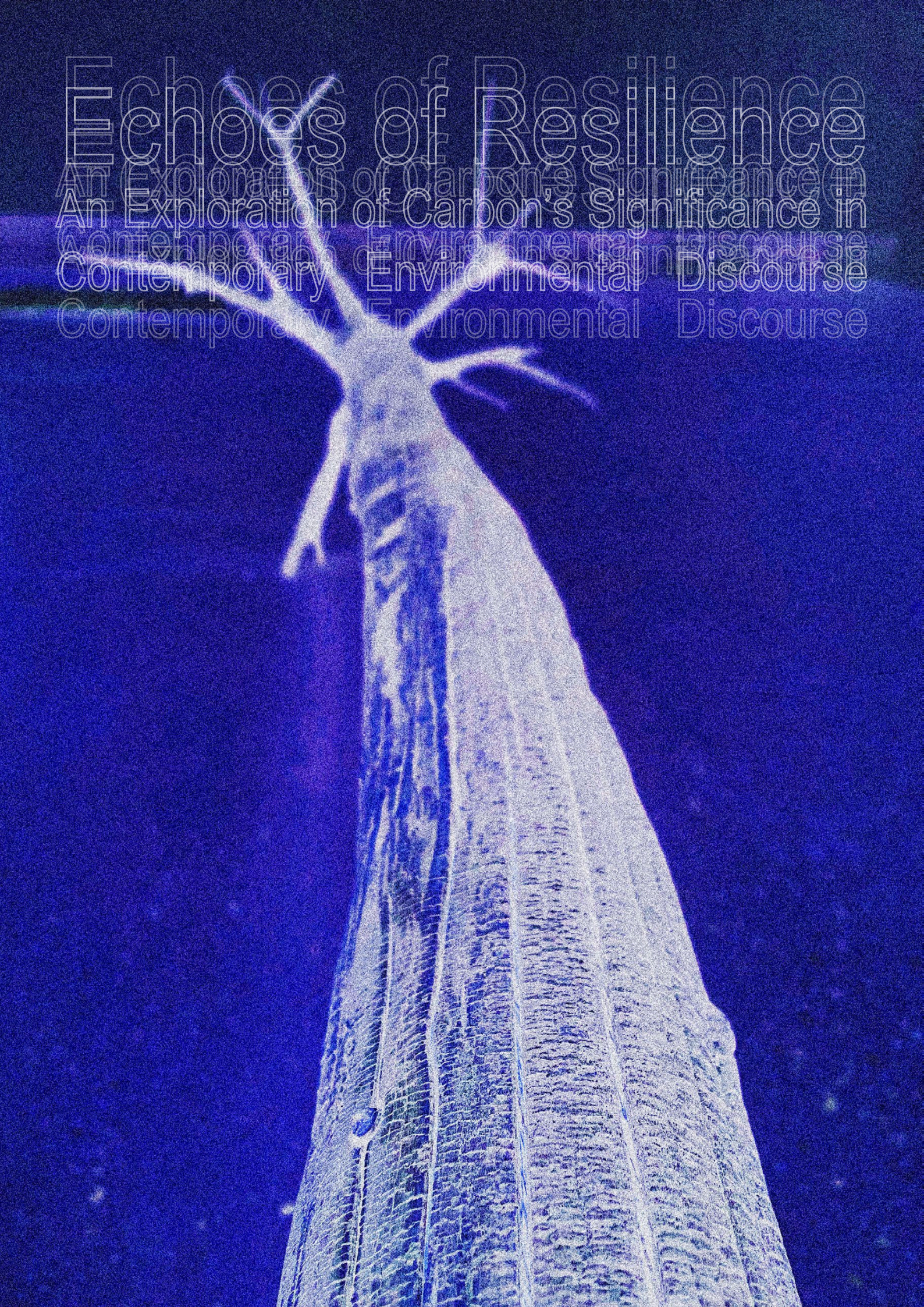


Echoes of Resilience

An Exploration of Carbon's Significance in Contemporary Environmental Discourse



Echoes of Resilience - An Exploration of Carbon's Significance in Contemporary Environmental Discourse

MFA in Medium- and Material Based Art

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Abstract:

In this thesis, I explore by encountering ephemerality, a specific allotrope (Graphite and charcoal represent various physical manifestations in which carbon exists. They exemplify different allotropes of carbon, each with distinct properties and structures) of carbon that is graphite and charcoal as a primary material and anthropogenic changes in nature. My exploration started with the backdrop of my tranquil village, Gurpara, nestled amidst lush greenery and evolving landscapes, where my childhood experiences and environmental observations of natural elements for example movement of kerosene lamp smoke. I delve into the integration of scientific curiosity, particularly in optical and natural phenomena and the ephemeral qualities of nature, into my creative process.

I take inspiration from artists like Bill Viola, Pierre Huyghe and Andy Goldsworthy as I explore the corporeal dimension of art-making, engaging audiences on sensory and emotional levels. My art practice has evolved to incorporate a combination of drawings, kinetic installations, and sonic elements, and collaborative ventures with scientists to push the boundaries of traditional art mediums. In my thesis, I have talked about various projects but particularly focused on “Echoes of Resilience,” a multidimensional installation that explores the impact of carbon on the environment. The work juxtaposes the first instances of mark-making using charcoal in prehistoric caves with graphite and contemporary concerns surrounding climate change. Through kinetic installations and mark-making, I confront viewers with the urgency of environmental consciousness, weaving a narrative of nature’s resilience and adaptation in the face of ecological challenges. My thesis concludes with a personal reflection on the impact of anthropogenic changes on nature drawing attention to the alarming effects on and human psychological health.

Introduction

My dissertation opens up a discourse on the environmental themes of resilience, transformation, and interconnectedness upon the contemporary landscape with Carbon as an important part of it. The exploration of carbon's significance finds expression through various mediums, with a particular focus on printmaking as a channel for creation.

In the first chapter, I am traveling back to my roots through my childhood memories of my rural village of Gurpara in West Bengal, India. It is here from where my journey towards art started. I have dedicated an entire chapter to my native as it is where the seeds of art and science were sowed. The chapter vividly illustrates my memories of being surrounded by Bengal's vast landscape surrounded by the Ganges, where I would spend hours observing the reflections of the changing sky. This chapter vividly portrays the simplicity and beauty of village life, from the flickering kerosene lamp to the mesmerizing patterns of wind over paddy fields guided further to influence and shaped by the synthesis of external inspirations. These experiences shaped my journey, leading me to blend scientific principles with intuitive expression. And resulting in the first collaborations with institutions like TIFR, Hyderabad, that provided fertile ground for me. Currently, scientists like Haroon Khan from OsloMet where he is working on brain signal data, has further fueled my exploration, particularly in visualizing brain signals through vibration drawings, highlighting the complexity of the project.

The second chapter unfolds with my experimentation with technology to recreate the ephemerality of nature through an expanded idea of drawings. I have pushed the boundaries of conventional mediums of expression. Drawing from Walter Benjamin's essay, on the impact of mechanical reproduction in art, I have reflected upon the evolution of media and the potential shift towards virtual and augmented reality from traditional mediums. I have looked at different artists whose works have inspired me like Bill Viola, Andy Goldsworthy, and Pierre Huyghe. Their thought process and sensorial experiences of the work have transcended my working methods. I have further gone deeper into my art practice in this chapter by discussing the phenomena of science that I integrate into my practice, specifically optical and natural phenomena.

Later on, it encompasses the journey of my art-making process in the last five years taking the readers through some of my works in detail. In this chapter, I have journeyed through my practice in the form of Immersive installations, and experimental drawings.

In the third chapter, I am presenting my project Echoes of Resilience which explores carbon's significance in the present condition of the world. Through the synthesis of personal experiences, and scientific inquiry where a symphony of visual, kinetic, and auditory elements are employed. The chapter invites readers to reconsider our relationship with the natural world and its impact.

The fourth Chapter reflects on the concept of ephemeral landscapes, tracing the historical lineage of artists engaging with nature. From the Land artists of the 1960s to contemporary visionaries. The chapter explores how art has served as a medium for conveying the transient nature and the impact of human advancement on landscapes and anthropogenic

changes. Furthermore, this reflects how I experienced the changing landscapes, and environmental degradation where I was brought up. It shifts focus to climate change, discussing significant events like COP24 and artist responses such as Ai Weiwei and Olafur Eliasson's Ice Watch. Through the lens of Isabelle Stengers' essay "An Ecology of Practices," in this chapter, I talked about how environmental artists navigate capitalist constraints and cultivate sustainable creative ecosystems. In the end, my experimentation explores carbon as both material and subject focusing on the intersection of nature and technology in contemporary art.

In Chapter Fifth I have talked about carbon's significance, portraying it as both a life-giving force and a threat to ecosystems. And how the project Echoes of Resilience serves as a visual record of the cyclical nature of carbon and its implications for climate change resilience.

Chapter six explores the art of mark-making in relation to environmental changes, emphasizing its role as a visual language for expressing emotions, movement, and narratives. Carbon-laden marks on paper become records of environmental shifts, embodying the fragility and resilience of the natural world.

Through these chapters, the text weaves a compelling narrative that transcends disciplinary boundaries. This will invite readers to confront the significance of carbon as a material and to understand environmental challenges.



Chapter 1: Going back to My roots

1.1 My childhood and motivation

My art training began at home with my father when I was young. He later enrolled me in an art school, where I first learned to draw lines, circles, and various geometric forms. I also became acquainted with different colors and kinds of pencils. I was born and raised in a rural village in West Bengal, India. The village fascinated me in my childhood. It was surrounded by greenery and somewhat isolated, with other villages connected by muddy roads. Over time, these roads developed from mud to bricks to concrete, but the vast green landscape under the blue sky and wetlands remained. My village, Gurpara, means “jaggery village” and is quite tranquil and mystical, with around 30-40 families mostly engaged in farming and small businesses. I believe my curiosity was nurtured by the beauty of my village, with its clean air and simplicity.

Growing up practicing art, I explored various aspects of it, including outdoor watercolor studies. I particularly enjoyed studying the jungle, banana fields, and water bodies. After seeing Claude Monet’s paintings, I fell in love with pond studies, observing reflections on the water’s surface. Glass also became a captivating subject for me due to its ever-changing nature and the rapid transformations within its layers.

1.2 Blending Art and Science

I have always been intrigued by science since childhood. Growing up, in my village, there was no electricity, so we mainly used kerosene lamps, because candles were a luxury item for us to afford. The shifting colors and forms created by the kerosene lamp's smoke often ignited my imagination. During autumn, when the changing cloud formations resembled various shapes. Another fascinating sight was the movement of wind over the paddy fields, resembling green and golden waves. Such ephemeral experiences have now become my inspirations for my work.

I haven't left my curiosity in science till now. You can find traces of it in each of my works, be it in my projects entitled Tremor, cube- insect, Interim, rebounding musings or Plumbago. The seamless blending of art and scientific knowledge is my approach towards art making, where each informs and enriches the other in a continual dialogue of discovery. Collaboration has been a central tenet of my practice, as seen in my previous collaborative project - Size, where dialogues with other artists and scientists from Tata Institute of Fundamental Research (TIFR), Hyderabad, have helped me enrich conceptually in my work. Through these collaborations, I've explored new ideas and approaches, pushing the boundaries of what art can be and how it can engage with the world. This multidisciplinary approach is presented in the fusion of drawing in an expanded way inclusive of painting, video, and sound to create a kaleidoscopic array of inter-media installations that challenge traditional categorizations. My engagement with scientific principles is not a mere overlay of artistic endeavors but an intrinsic aspect of the creative process. By merging the analytical reasoning of scientific methodology with the intuitive nature of expression, I stage experiments that unfold as a synergistic exploration of form, content, and materiality.

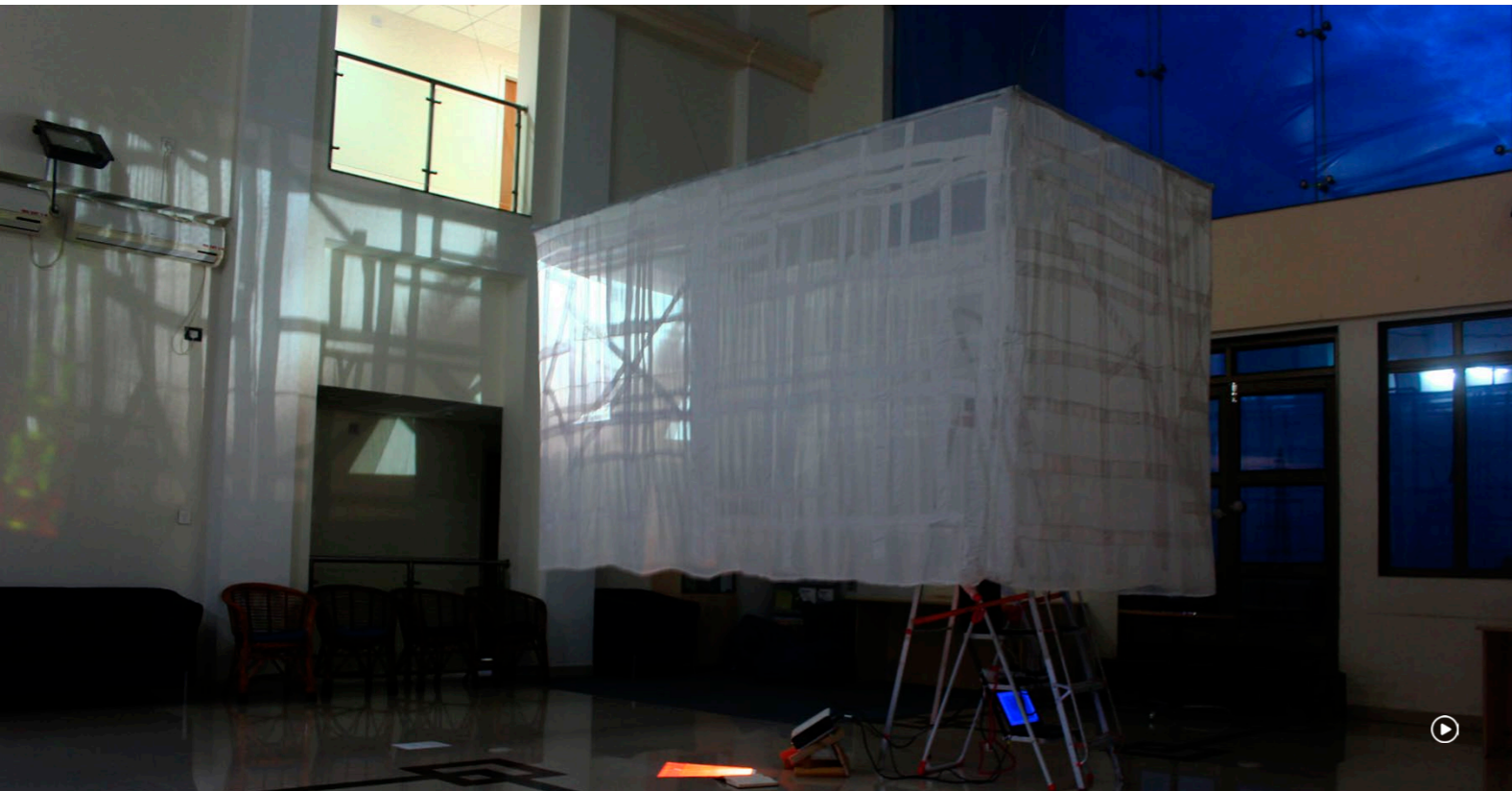
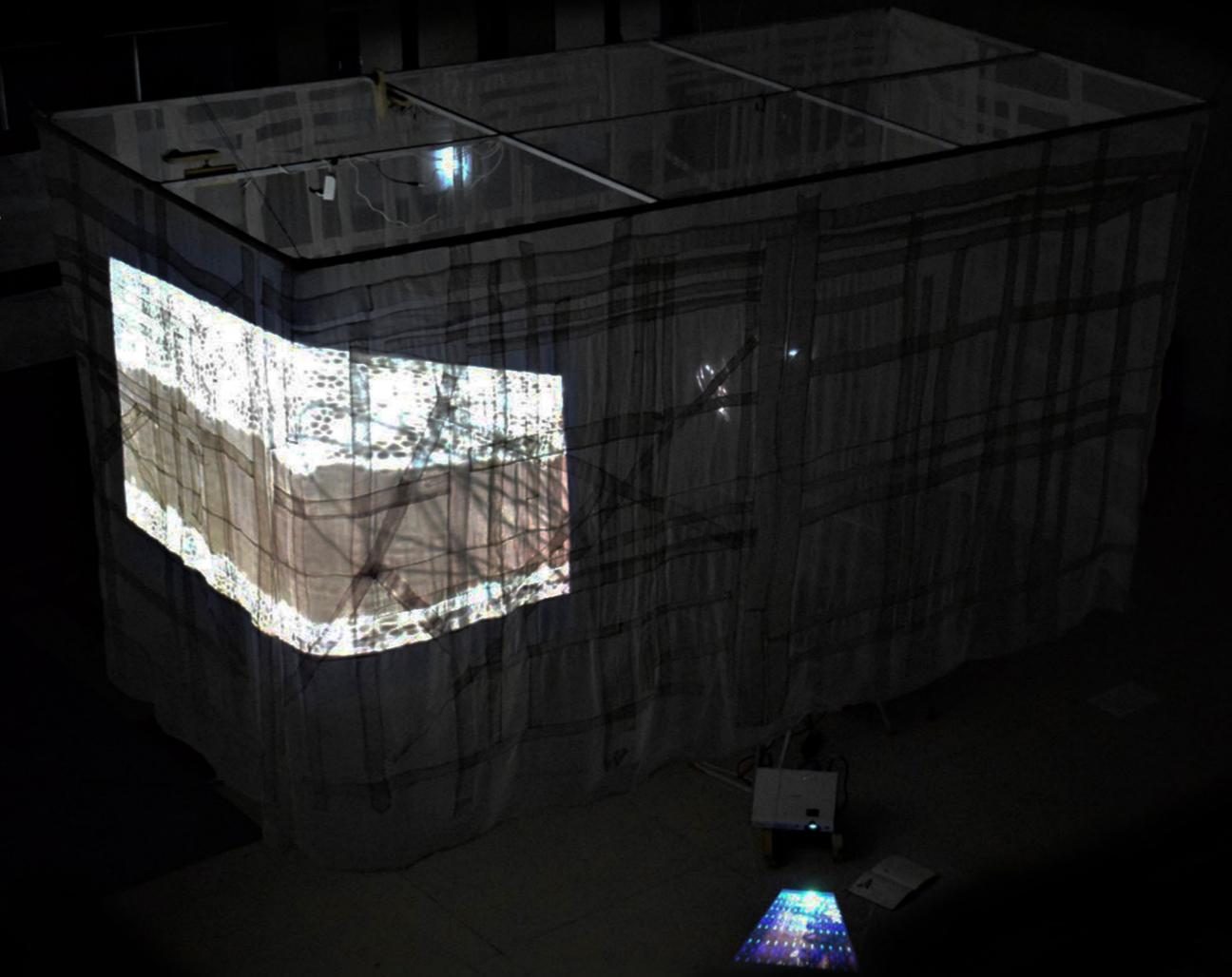


Fig. 2; Lens-cape (2019); Cloth, iron frame, sketch book & three videos: 0:18, 0:6, 0:16 min; 12 x 6 x 7ft; installation view at TIFR, Hyderabad

Fig. 3; Lens-cape (2019), Cloth, iron frame, sketch book & three videos: 0:18, 0:6, 0:16 min; 12 x 6 x 7ft; installation view at TIFR, Hyderabad



In this context, I would like to particularly talk about my project Plumbago. At this point, I wanted to collaborate with a scientist who is working towards machines and electronics to get answers to my questions, which I thought could bring some different perspectives to my drawings. I ventured to OsloMet out of curiosity. With the help of a friend who was also a student over there, I explored the robotic labs at the institute. It was during this visit that I got a chance to meet Haroon Khan, who is working on the project Advanced Health Intelligence and brain-inspired Technologies (ADEPT), who is a Faculty member of the Department of Machines, Electronics and Chemistry, Faculty of Technology, he was discussing a project related to brain signals with his colleague. His team's approach fascinated me, and as we engaged in conversation, I showed him my drawing with vibration signals from low-frequency sound and body movement. During the conversation, Haroon mentioned a previous collaboration involving cultural councils and brain signal reactions during drawing sessions. We discussed the possibility of visualizing the data obtained from brain signals, and it became clear that a collaboration could be mutually beneficial. This encounter marked the beginning of our collaborative journey, where we aimed to merge scientific data with artistic expression in terms of visualizing the data.

Plumbago was one of the results of this collaboration. The word plumbago is an older term used for Graphite. The artwork is a series of vibration drawings that explore the mental and bodily processes of seeing. Each artwork within this series represents a unique journey into the complexities of human vision and cognition. At regular intervals, a handcrafted apparatus along with my body movements creates viscous¹ fluid drawings on paper. It shows a turbulent movement of surface tension and fluid motion of the graphite. Due to the vibration of the surface, the graphite particles move, converge, and diffuse until inevitably the fragile particles of graphite stick on paper.

I would like to argue that the visual with kinetic and spatial elements of Plumbago create a symphony of what could be defined as a “synesthetic experience”. Synesthesia is a neurological phenomenon where stimulation of one sensory or cognitive pathway leads to automatic, involuntary experiences in a second sensory or cognitive pathway. In simpler terms, it's a condition where someone might “see” sounds, “taste” colors, or experience other cross-sensory perceptions. For example, a synesthete might associate specific colors with certain letters or numbers, or they might perceive music as having particular shapes or textures. These drawings which I think of as microcosmic are meticulously created from the vibration signals. Throughout the project execution, I have questioned myself, such as: What happens in the brain when we see? How do our sensory organs interpret visual information? I want to shed light on the detailed scientific processes underlying our perception of the world around us.

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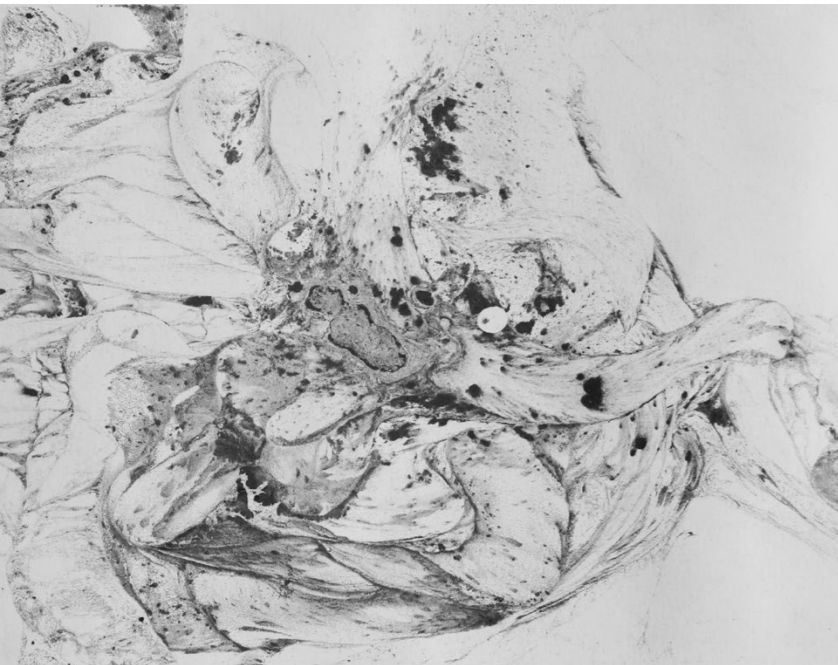


Fig. 4, Plumbago(2022-); graphite dust on paper

¹ Viscosity** is the property of a given liquid that describes its resistance to flow. A highly viscous fluid tends to be thick, like honey or cold maple syrup. Compared to a relatively nonviscous fluid, such as water, highly viscous liquids flow much more slowly.

** The viscosity of a fluid is a measure of its resistance to deformation at a given rate. For liquids, it corresponds to the informal concept of “thickness”: for example, syrup has a higher viscosity than water. Viscosity is defined scientifically as a force multiplied by a time divided by an area. Thus its SI units are newton-seconds per square meter or pascal-seconds.



Fig. 5; Plumbago(2023); graphite dust ; paper, amplifier, speakers ; 152 x 90 cm

Chapter 2: Forces that push the boundaries

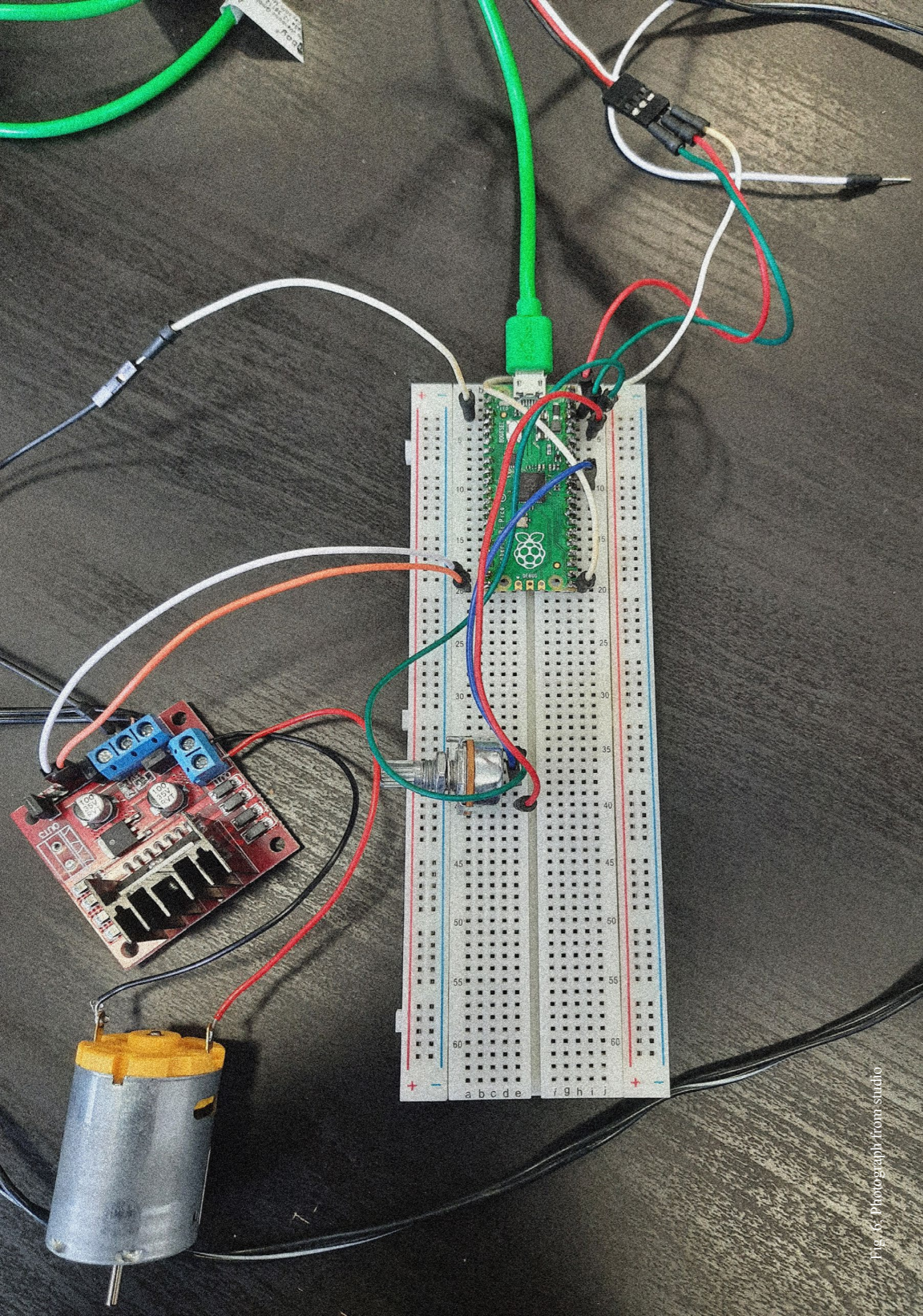


Fig. 6. Photograph from studio

2.1 Technological Experimentation as a Catalyst

There are transitory moments and phenomena in nature which inspire me to work. In these moments there are some which I observe while some get missed by my mere observation. There are some phenomena even after observation are mysterious to me as I don't know the reason behind it or are out of my knowledge. When I step back and observe these mysterious things, there are various ephemeral² qualities that I discovered. I believe that with experiments there is a possibility of creating or mimicking the phenomena and altering the condition physically and chemically. At this point, this is where these events induce me to experiment with the help of technology.

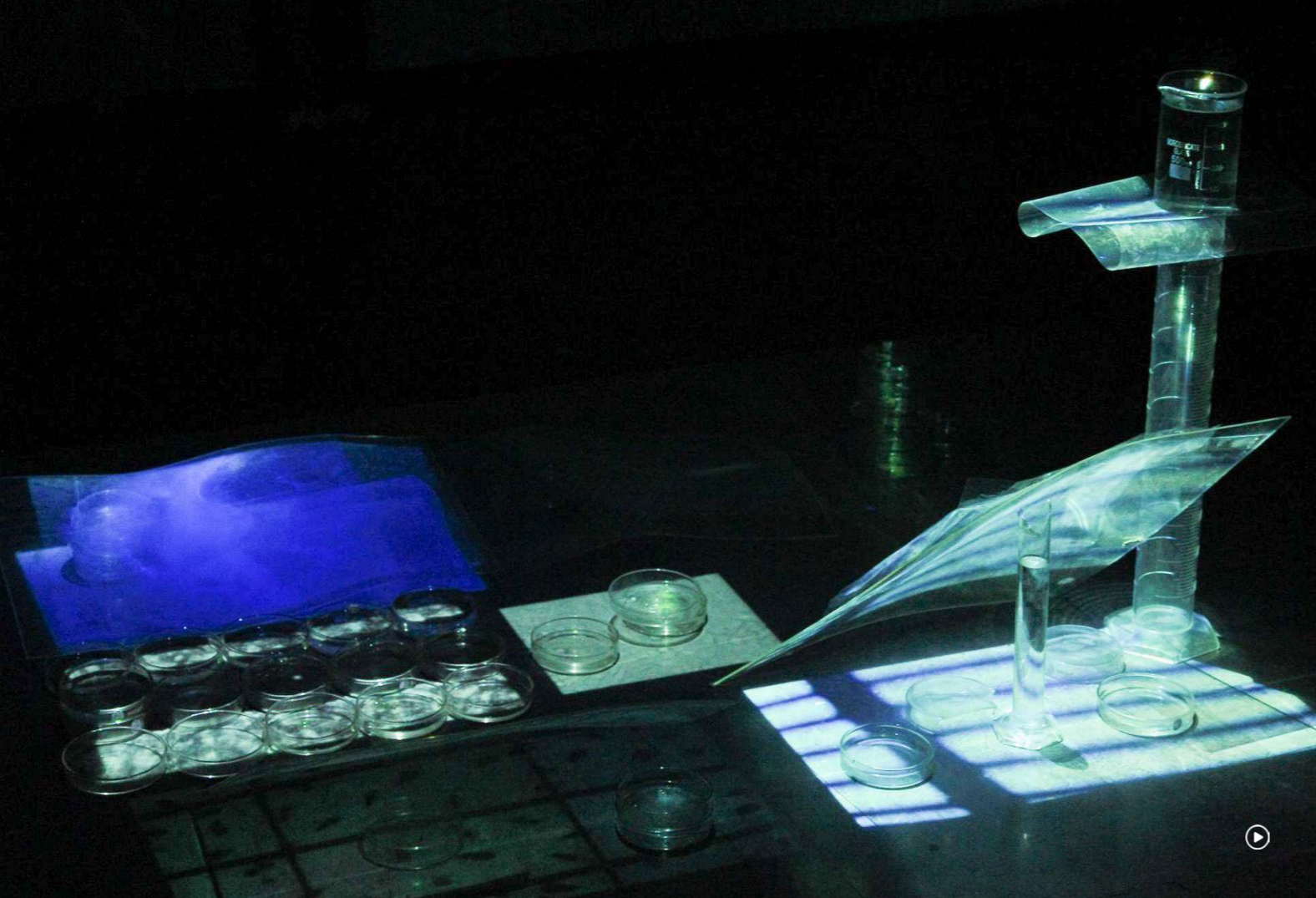


Fig. 7; lucid (2019); plastic film, 7 channel video, projector, Petri Dishes, Beakers, Fiberglass, 4.1 channel sound, 2 Air conditioner

In the essay titled- “The Work of Art in the Age of Mechanical Reproduction”, Walter Benjamin provokes questions about the nature of art, authenticity, aura, and the impact of technology on mass production and its reception. I would like to put my argument here about the constantly evolving technology’s ephemeral shifts of media such as print media, cameras, and film projectors. The evolution from film projectors to virtual and augmented reality has marked a swift progression in ephemeral media. Considering these changes, I find myself immersed in vivid imagery. Virtual reality³ and Augmented reality⁴ has an ability to simulate environments by mimicking the phenomenological changes in nature, which becomes ephemeral in itself. Mechanical components facilitate the creation of virtual environments using video or sound data, which though intangible, can be experienced through sensory perception. These mechanically constructed vocabularies offer different contexts for communication.

The perpetual advancement of technology and machinery, constantly tied to the present, embodies the ephemeral change. It remains variable across ages, always hinting at forthcoming transformations. I have embraced the possibilities of contemporary tools and technologies, wanting to push the boundaries of conventional modes of expression. I use technology to craft immersive spaces for viewers emphasizing the physical experience of my work. I engage with custom electronics, microcontrollers, and other technological things to bring their creative visions to life. It allows for the manipulation of light, sound, and spatial elements in ways that challenge perceptual boundaries.

³ Virtual reality (VR) is a simulated experience that employs pose tracking and 3D near-eye displays to give the user an immersive feel of a virtual world.

⁴ Augmented reality is an interactive experience that enhances the real world with computer-generated perceptual information.

I got a chance to work at the Studio Modular at École Supérieure D’arts & Médias De Caen/Cherbourg and that encouraged me to work with custom electronics combining basic physics by using a microcontroller⁵ and also working with sound data broadened my visionary of combining scientific knowledge with my multidisciplinary practice.

I have engaged in a series of expanded drawings that employ electronic tools to create immersive experiences. These drawings go beyond traditional boundaries, incorporating graphite dust, DC motors, microcontrollers, and various other electronics in a process-based art approach. The expanded drawings serve as a medium for experimentation, capturing moments of transformation and momentary nature. Through the amalgamation of traditional and contemporary elements, I seek to engage viewers in a dialogue about the evolving relationship between humanity, technology, and the environment.

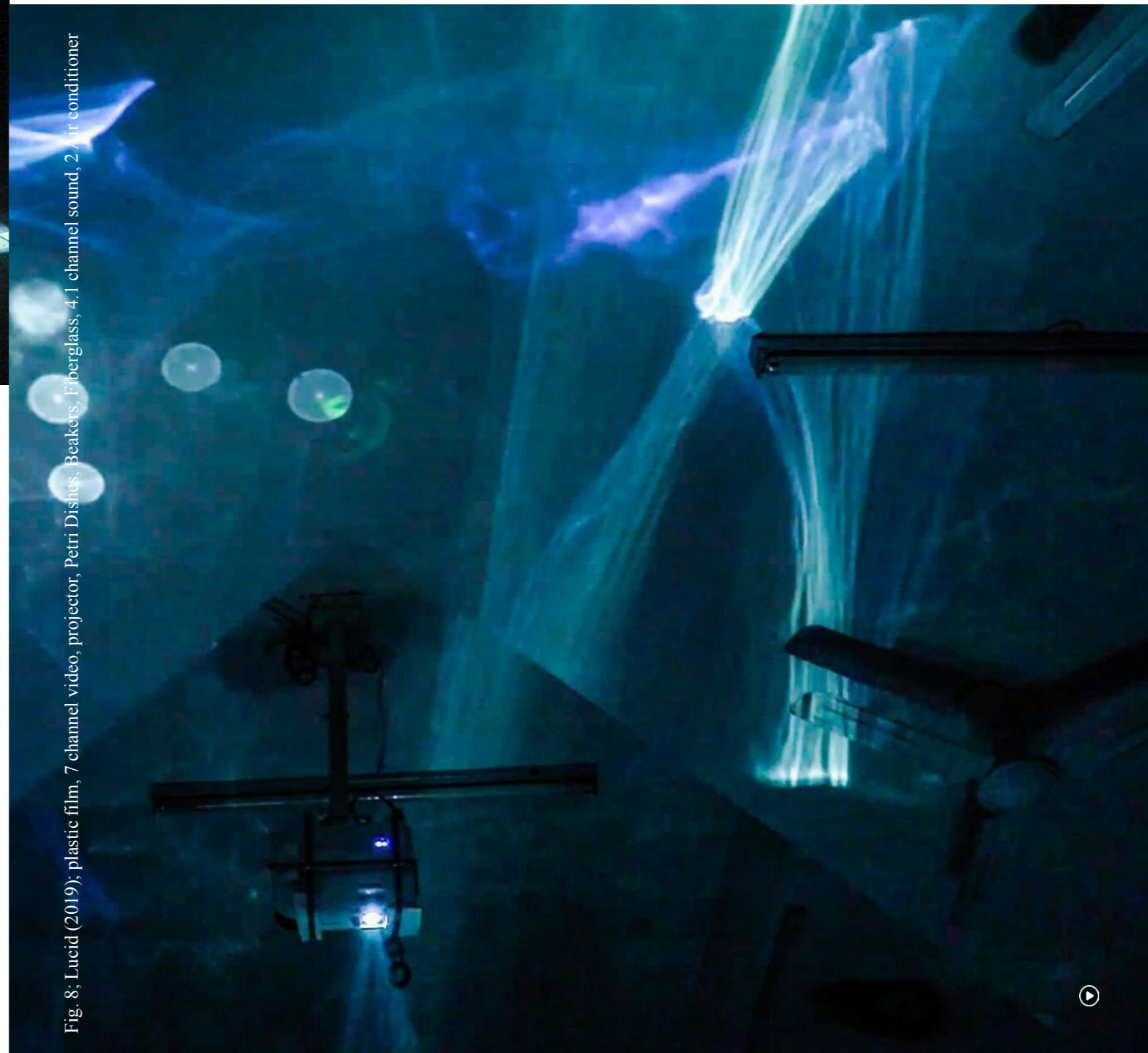


Fig. 8; Lucid (2019); plastic film, 7 channel video, projector, Petri Dishes, Beakers, Fiberglass, 4.1 channel sound, 2 Air conditioner

⁵ A microcontroller is a compact integrated circuit designed to govern a specific operation in an embedded system. A typical microcontroller includes a processor, memory and input/output (I/O) peripherals on a single chip.

2.2 Emphasizing the Physical Experience by looking at different artists

To capture the essence towards immersive, sensorial encounters, I find resonance in a quote by Bill Viola

“When you come into my pieces, it’s not an intellectual experience, it’s a physical experience. It’s coming at your body.” - Bill Viola.

Viola’s words encourage me to move beyond the conceptual understanding of my work, which is by engaging the audience on a corporeal⁶ level. Bill Viola, is a pioneering figure in video art whose artistic expression explores on electronic, sound, and image technology in new media, and has an immense influence on my own creative process. According to my observation, his work explores the fleeting moments of human experience particularly of life and death, capturing emotions, sensations, and states of being that are intangible and ephemeral. His ability to convey the perception of these moments through the medium of video art is inspiring to me a lot and his exploration of the ephemeral and the transient nature of existence has deeply resonated with my art practice.

Similarly, I am fascinated by the transient nature of everyday phenomena which is impermanent by its nature. Whether it’s the interplay of light and shadow across a landscape, the delicate flutter of a butterfly’s wings, or the fleeting moments that we encounter in nature. In my practice, I am looking to capture and explore the ephemeral qualities of existence, using various mediums and techniques to convey the elusive nature

of time and experience. Like Viola, I believe that there is beauty in the impermanent and that by embracing the fleeting nature of life, we can gain a deeper understanding of our own existence. Viola’s exploration on temporality resonates with me deeply where he invites viewers to contemplate the transitory moment of time in reality, asking us to question our perceptions and assumptions about the world around us. In my practice, I am trying to challenge notions of value and authenticity, recognizing that these concepts are often tied to temporal contexts. By experimenting with materials and perspectives, I want to reveal the inherent complexity and richness of the ephemeral world we inhabit.

“Land artist Andy Goldsworthy writes: I cannot disconnect materials as I used to. My strongest work now is so rooted in place that it cannot be separated from where it is made – the work is the place. Atmosphere and feeling now direct me more than the picking up of a leaf, stick or stone ... a long resting stone is not an object in the landscape but a deeply ingrained witness to time and a focus of energy for its surroundings.”

- Andy Goldsworthy

According to the above extract, I observe how he repetitively makes visits to some sites where he encounters stones, leaves, and sticks that he described, as they change according to the season. He is interested in the binding of time in materials and places. My walks in the forest every time remind me of his work. As I take a walk, I encounter trees in charcoal form because they get burnt due to the natural fire in forests during the dry season or by humans themselves for several reasons like slash and burn agriculture or simply for fire to keep themselves warm in cold. It reminds me of climate change in today’s scenario. So, for my current project, I picked up a tree branch from near the Sognsvann Lake, one of the many trail walks in the forest of Oslo.

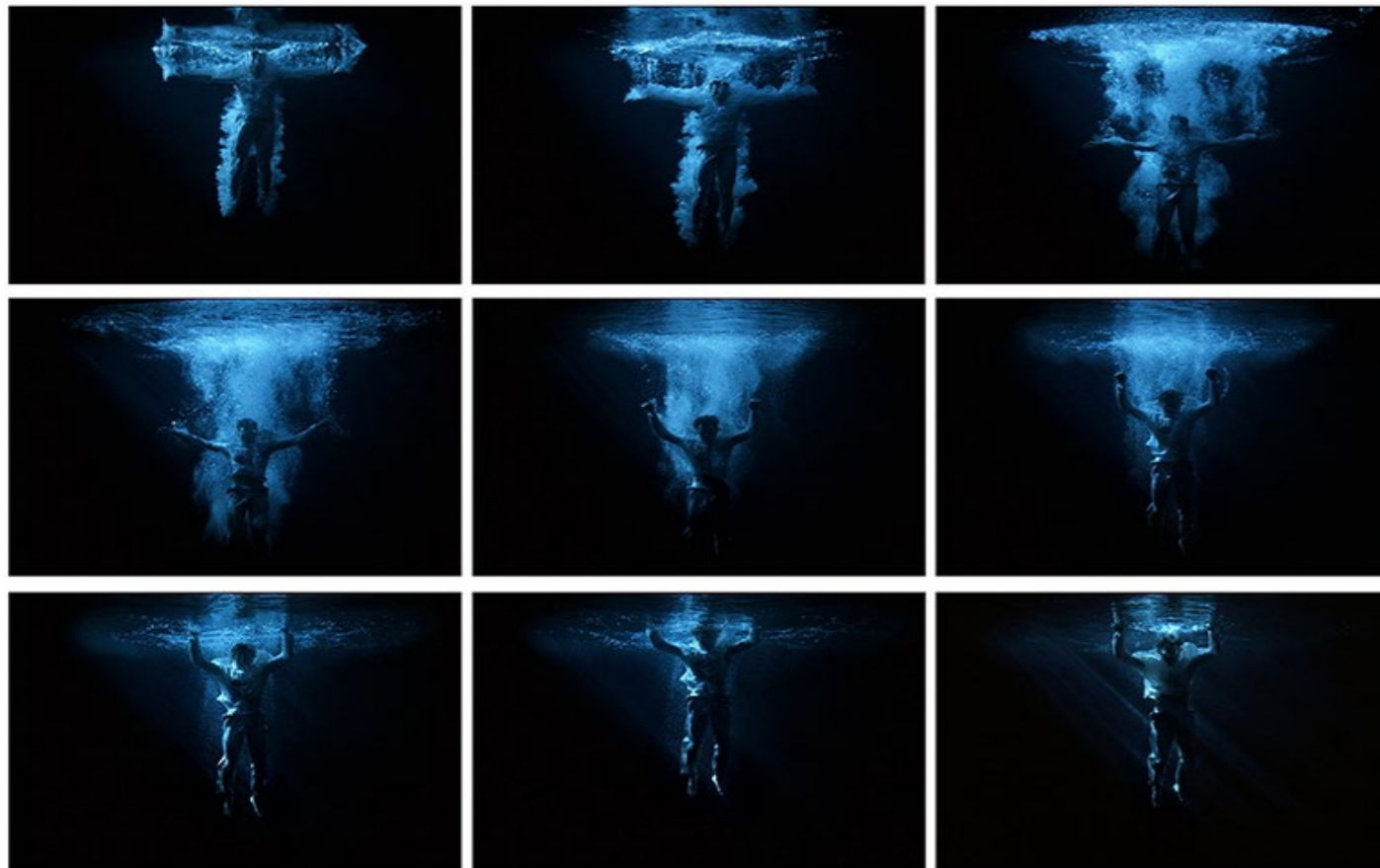


Fig. 9; Ascension- Bill Viola(2000); The Museum of Fine Arts, Houston



Fig. 10; Storm King Wall - Andy Goldsworthy. (1998), Storm King Art Center, United States

6 Corporeal: Relating to a person’s body, especially as opposed to their spirit.

2.3 Integration of Natural and Optical Phenomena

“I have often described the art object as a hysterical thing, an object that needs the gaze of a viewer in order to live,” Huyghe has said. “The medium between an art object and a subject—a viewer—is a dynamic process, and I’m trying to maintain that as much as I can.”

- Pierre Huyghe

My art practice explores experimentation across various mediums. In my practice Huyghe has been a significant source of inspiration, guiding me towards deeper insights into the intersections of art, technology, and environmental consciousness. Huyghe’s multidisciplinary approach, in films and installations, resonates deeply with my own practice. His ability to blur the lines between fact and fiction, while reinventing social rituals through playful experimentation, has encouraged me to push the boundaries of classical art forms. Like Huyghe, I too create immersive experiences that may challenge audience expectations and provoke contemplation.

Further, Huyghe’s emphasis on the essential interconnectedness of all elements within an artwork resonates with my own belief in the importance of bridging the gap between material and immaterial realms. In my practice, I have sought to emulate Huyghe’s approach by collaborating with other artists and scientists to enrich my work conceptually. Through these collaborations, I have explored new ideas and approaches, pushing the boundaries of what art can be and how it can engage with the world.



Fig. 11; Nymphéas Transplant; La déraison; Nymphéas Transplant 2014. “Pierre Huyghe

At the core of my practice lies the integration of natural and optical phenomena. My projects (Tremor, Cube Insect, Ephemera, Lucid, Moire, Rebounding Musings) endeavor by crafting visual compositions that not only reflect the beauty of nature but also invite sensorial engagement. This integration is not only an aesthetic choice but also a deliberate attempt to create a symphony of synesthetic experiences, where the immaterial and intangible nature of light and sound become integral elements in my artworks.

“Phenomenon” is a term commonly used across various scientific disciplines to describe observable events or occurrences that can be perceived through the senses or detected through instruments. In the scientific field, phenomena are usually studied, analyzed, and explained through the scientific method and theoretical frameworks. According to Immanuel Kant’s philosophy, phenomena are the objects of experience, the things that we perceive through our senses and that are subject to the categories and forms of human understanding. These are the appearances of things as they appear to us, shaped by our mental faculties such as space, time, and causality.

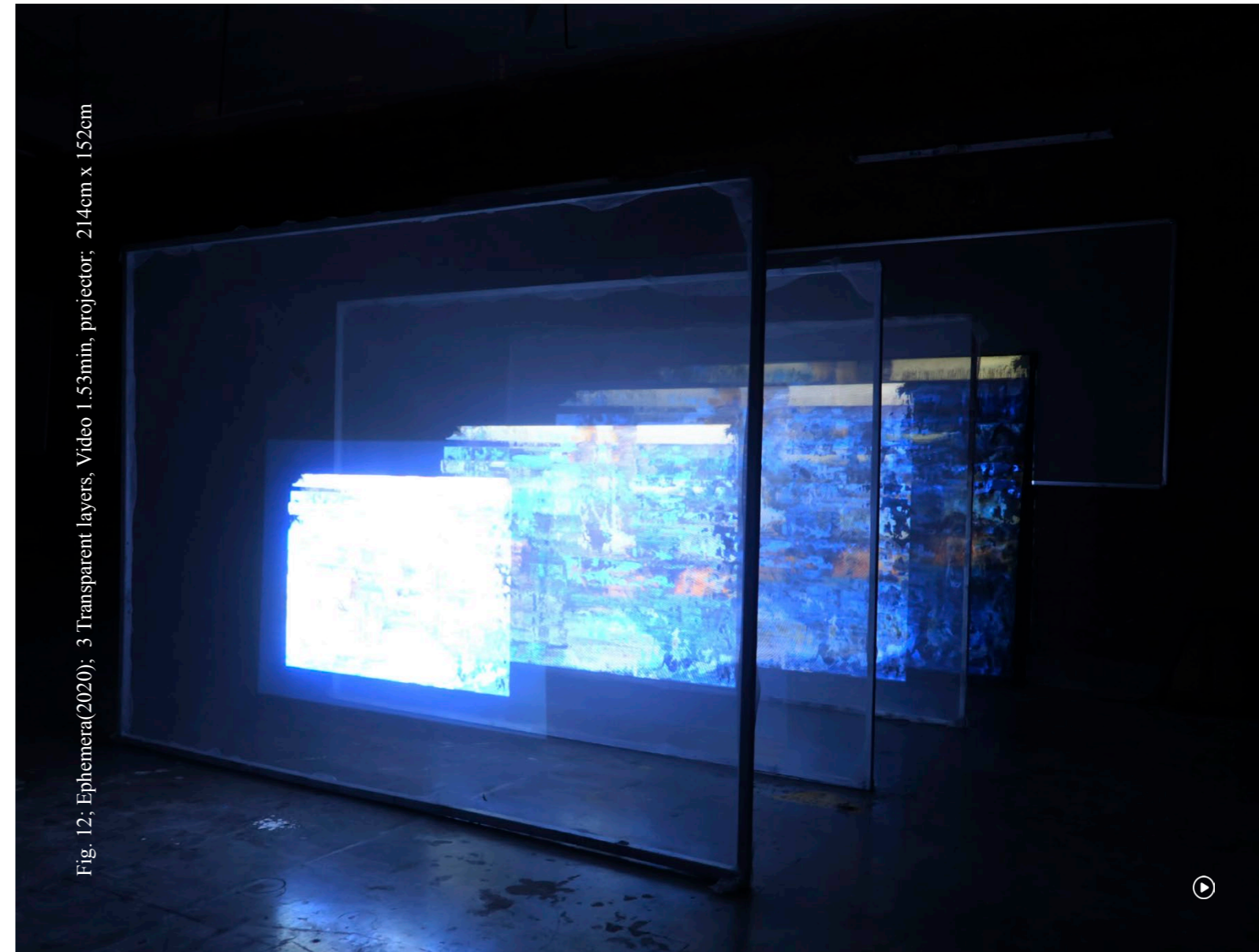


Fig. 12; Ephemera(2020); 3 Transparent layers, Video 1.53min, projector; 214cm x 152cm



Fig. 13; Cube Insect(2023); plexiglass, polyester phome, stroboscope, custom sound, exhaust fan, RPi control unit

Optical phenomena are events that result from the interaction of light and matter. They arise from the optical properties of the atmosphere. Often, these phenomena arise from the interaction of sunlight or moonlight with elements like the atmosphere, clouds, water, and various particles suspended in the air. Some examples of these are - Rainbow, where sunlight interacts with water droplets, reflecting and refracting to create a spectrum of colors; lightning, fleeting light on glass, the glistening of the water surface when sun rays falls on it, Aurora, Crepuscular rays, Iridescence, shadow, Moiré pattern, Reflection, Refraction etc. From the enigmatic properties of our eyes to the intriguing entoptic phenomena, our understanding of optics delves deep into the fabric of our surroundings.



Fig. 14; Tremor(2023); wooden structure, Speakers, dust particles, generative light, filled recorded and modulated sound,plaxiglass

Natural Phenomena are those events that occur without any human intervention but naturally occur. Examples include sunrise, weather, fog, thunder, tornadoes; biological processes, decomposition, germination; physical processes, wave propagation, erosion, and natural disasters such as electromagnetic pulses, and earthquakes.

In my work, I try to mimic both the natural and optical phenomenon happening in nature which I have experienced. For eg in the work Rebounding Musings I have worked with the interplay of video and light, by crafting a physical space. Within this space, video projections evoke the optical phenomena of light traversing surfaces. I first recorded with a video camera of the cloud movement, cell migration, movement of birds, changes, and movement of light on water surface. I made a 7 channel video of these recordings. Then I took a reflective material that of the plastic sheet on which I projected the 7-channel video. Then I further recorded that and projected the final video on the wall. I have modulated the recorded sound of all the videos and played it along with the video. Here the camera becomes the vessel to encapsulate the interplay of light and motion within the confines of space inviting contemplation on the convergence of science and abstraction of the

2.4 Overview of the Last Five Years

visual. This work stems from the time back in my childhood when I would spend hours gazing at the Ganga river water looking at the reflection of the fleeting colours of the evening sky changing forms as I would hit the water with pebbles creating abstract forms of the reflective colours on the water. Ganges River, great river of the plains of the northern Indian subcontinent. From time immemorial it has been the holy river of Hinduism. For most of its course it is a wide and sluggish stream, flowing through one of the most fertile and densely populated regions in the world. Despite its importance, its length of 1,560 miles (2,510 km) is relatively short compared with the other great rivers of Asia or of the world.

Over the past five years, my practice has been a journey of exploration and discovery, encompassing a wide arena of mediums and themes. From immersive installations to intricate drawings and collaborative projects, my work has sought to push boundaries and provoke thought on the intersections of art, technology, and environmental consciousness.

Through installations like Interim, Tremor, Cube Insect, and Reflex, I've strived to create immersive experiences that transcend traditional boundaries. By blending video projection, generative programming, modulated sound, and various materials, these pieces invite viewers to contemplate themes ranging from the organic to the synthetic, from the visible to the invisible. Each installation serves as a portal into a world where technology and human perception intertwine, sparking introspection and reflection.

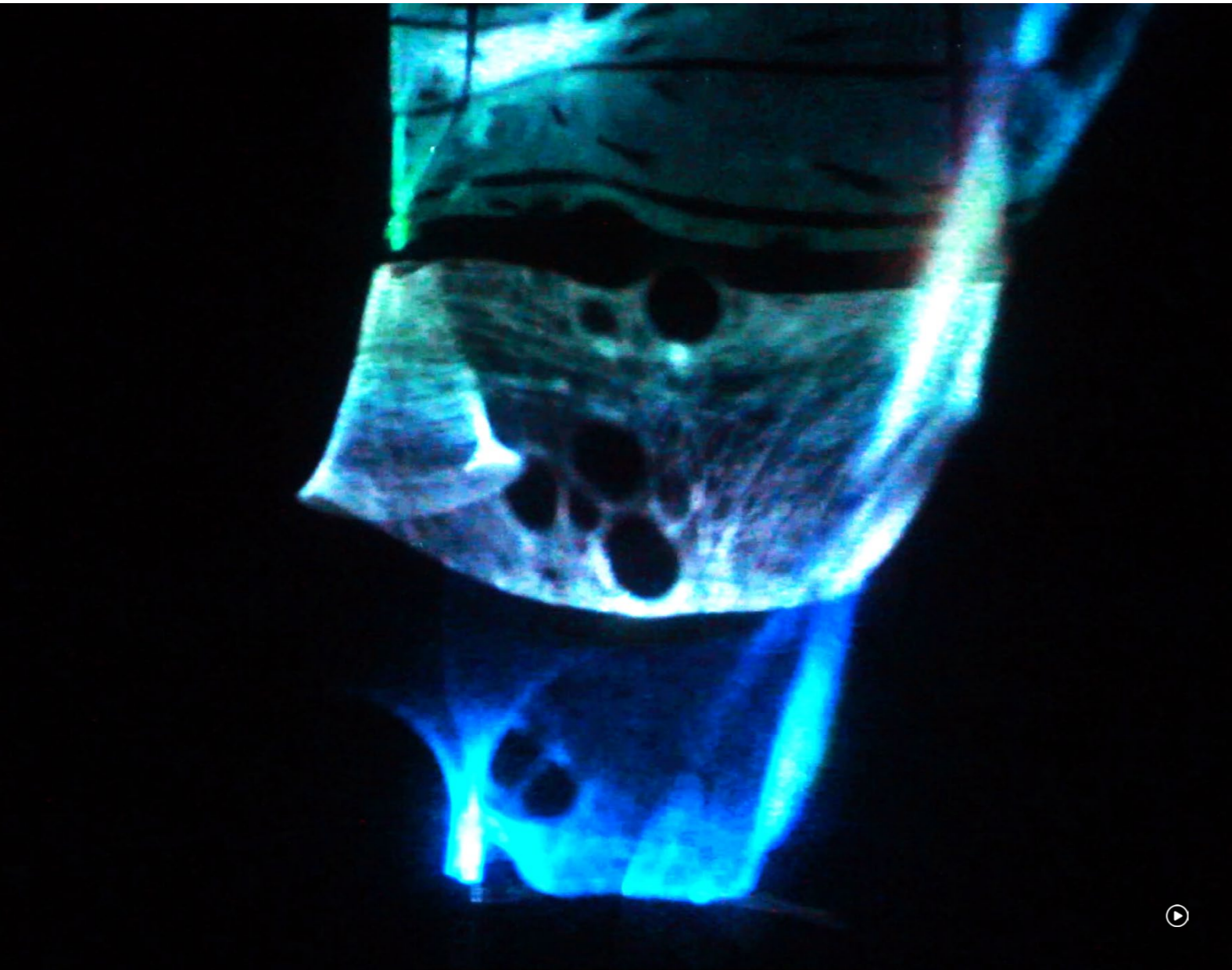


Fig. 15; Rebounding-musings(2021); Film, 7 channel video, projector, vibrator, filed recorded & modulated sound

Fig. 16, Interim 2.0(2022); wood, mesh fabric, steel, generative video, filled recorded sound, 4k projector, 4.1 sound





Fig. 17, Interim 2.0(2022); wood, mesh fabric, steel, generative video, filled recorded sound, 4k projector, 4.1 surround sound

My goal in all my artwork is to bridge the gap between material and immaterial realms, inviting viewers to engage in synesthetic experiences that stimulate the senses and provoke emotional responses. Whether through the immersive landscapes of Cube Insect or the dynamic interplay of color and sound in Reflex, I aim to create spaces where viewers can reconsider their relationship with the world around them.

Collaboration has been a central tenet of my practice, as seen in projects like 'Size', where dialogues with other artists and scientists have enriched the conceptual depth of my work. Through these collaborations, I've explored new ideas and approaches, pushing the boundaries of what art can be and how it can engage with the world.

Overall, my art journey over the past five years has been about exploring sensory perception, environmental consciousness, and the transformative power of art. Through immersive installations, experimental drawings, and interdisciplinary collaborations, I strive to provoke contemplation and evoke emotional responses in viewers, inviting them to reconsider their place in the world and the impact of their actions.

The commitment to exploring the intersections of art, technology, and the environment reflects not only a personal artistic pursuit but also a profound belief in the power of visual storytelling to provoke contemplation and inspire a deeper connection with the world around us. Each piece crafted during this transformative period serves as a testament to the evolving nature of my artistic identity and contributes meaningfully to the broader discourse on our responsibility towards the environment.

Fig. 18; Tremor(2023); wooden structure, Speakers, dust particles, generative light, filled recorded and modulated sound, plaxiglassr

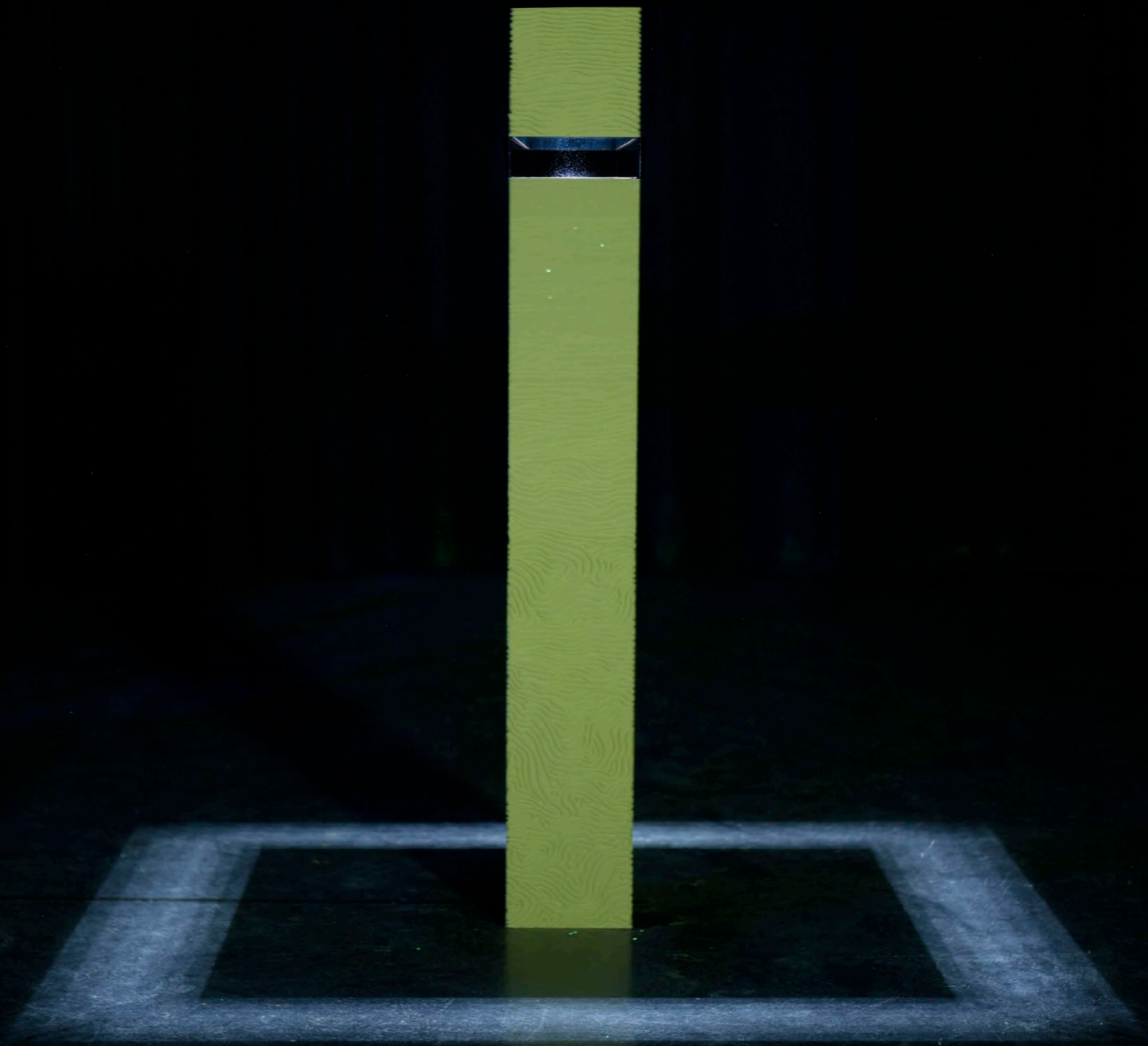




Fig. 19; Echoes of Resilience: Nature's Unyielding Spirit(2024); charred tree, paper, motors, Rpi control Unit, roller

Chapter 3: Current Project - “Echoes of Resilience: Nature’s Unyielding Spirit”

3.1 Overview of the Project

The inception of the project “Echoes of Resilience: Nature’s Unyielding Spirit” marks a profound exploration into the relationship between human creativity, environmental consciousness, and the timeless essence of nature. Through a combination of drawings, kinetic installations, and sonic elements, this artwork seeks to unravel the deeply embedded connections between the earliest expressions of human ingenuity, the impact of carbon in contemporary life, and the enduring spirit of nature.

I believe my work “Echoes of Resilience: Nature’s Unyielding Spirit” is the most significant work among all my works in my art journey. It is a multi-faceted exploration that conveys about the impact of carbon as a material in the environment. The project unfolds as a symphony of visual, kinetic, and auditory elements, weaving together drawings, a sonic component, and a kinetic installation to bring together an immersive narrative.



Fig. 20; Documentation of collecting tree near Sognsvann lake

3.2 Ideas behind the Project

The very first idea for this project came into my mind seeing and hearing lots of news about carbon emission and its effects in our contemporary society. And the way we declared ourselves about how conscious we are about the element carbon. If we look at how much waste is generated by the privileges of the privileged-class society which is also known for its throw-away culture because of mass consumerism. We all are living in a time when everything is a click away (here I would like to exclude the economically backward class people because they find resources even in waste). It sure does make life easier but also makes the planet closer to unlivable. Talking about fast fashion is a form of throw-away culture, that mostly targets the youth and the environment but also ‘throw-away prices’ attract them like a bee to buy more products each time. The fast fashion industry contributes to 10% of the global carbon emissions. It is also the second biggest consumer of water. These days we can see in different parts of the world the unbalanced use of natural elements resulting in forest fires and so on. Sometimes it is natural and sometimes man-made.

I like to present the world in black and white which results in most of my work in Graphite and charcoal drawings. For me, the contrast between Black and white is like the contrast between light and dark. This reminds me of the Sanskrit saying *tamso ma jyotirgamaya*⁷(“तमसोमा ज्योतिर्गमय”)“Lead me from darkness to light”. By saying this I would like to bring attention to the ignorance by us towards the environment but leading us towards knowledge. Knowledge of creating a better eco-conscious society, where we have to learn to live by following a sustainable lifestyle.

⁷ Tamaso ma jyotirgamaya—means “Lead me from darkness to light.” When the Vedas refer to darkness and light, they mean ignorance and knowledge, respectfully. This is so because ignorance, like darkness, obscures true understanding.



Fig. 21; Documentation of collecting tree near Sognsvann lake



Fig. 22; Documentation of transporting tree by tram in Oslo

3.3 Impression of carbon: an extended drawing

The project invites viewers to reflect on the marks we make on the world, drawing parallels between the earliest expressions of human creativity using charcoal and the contemporary impact of carbon emissions. The impressions on paper marked by the charred tree branches are like trails of drawings created by the tree. The use of charred tree branches serves as a poignant symbol, embodying the dichotomy between human intervention and the intrinsic presence of carbon in nature. As the paper glides against the charred branches, marks are generated, creating a visual narrative that reflects both the impact of human activity and the innate connection between the natural world and the creation process.



Fig. 23; Documentation of the installation at Galleri Seilduken



Fig. 24; Close up view of the charred tree at Galleri Seilduken

3.4 Kinetic Installation: Creating Marks with Charred Tree Branches

One of the important aspects of Echoes of Resilience is that it is a kinetic installation. This installation is a strong interplay of technology, nature, and human intervention. Microcontrollers and Passive Infrared (PIR) sensors orchestrate the movement of motorized rollers, autonomously guiding a 5-meter high paper. Semi-Charred tree branch is collected from forest is placed, allowing the paper to brush against them and create marks.

The central aspect of the project is that it leads the viewers in contemplation of the conundrum between the human's active participation and the inherent presence of carbon in nature. The kinetic installation becomes a metaphor for this delicate balance, as I deliberately manipulate the paper through technology, reflecting the ways in which human actions leave an indelible mark on the environment. The use of charred tree branches, representing the natural world, emphasizes the ongoing dialogue between humanity and the ecosystems we inhabit.

It becomes a visual commentary on the interconnectedness of nature and technology, urging contemplation on the responsibility we bear for the environmental consequences of our actions.



Fig. 25; Close up view from installation at Galleri Seilduken



Fig. 26; Close up view from installation at Galleri Seilduken

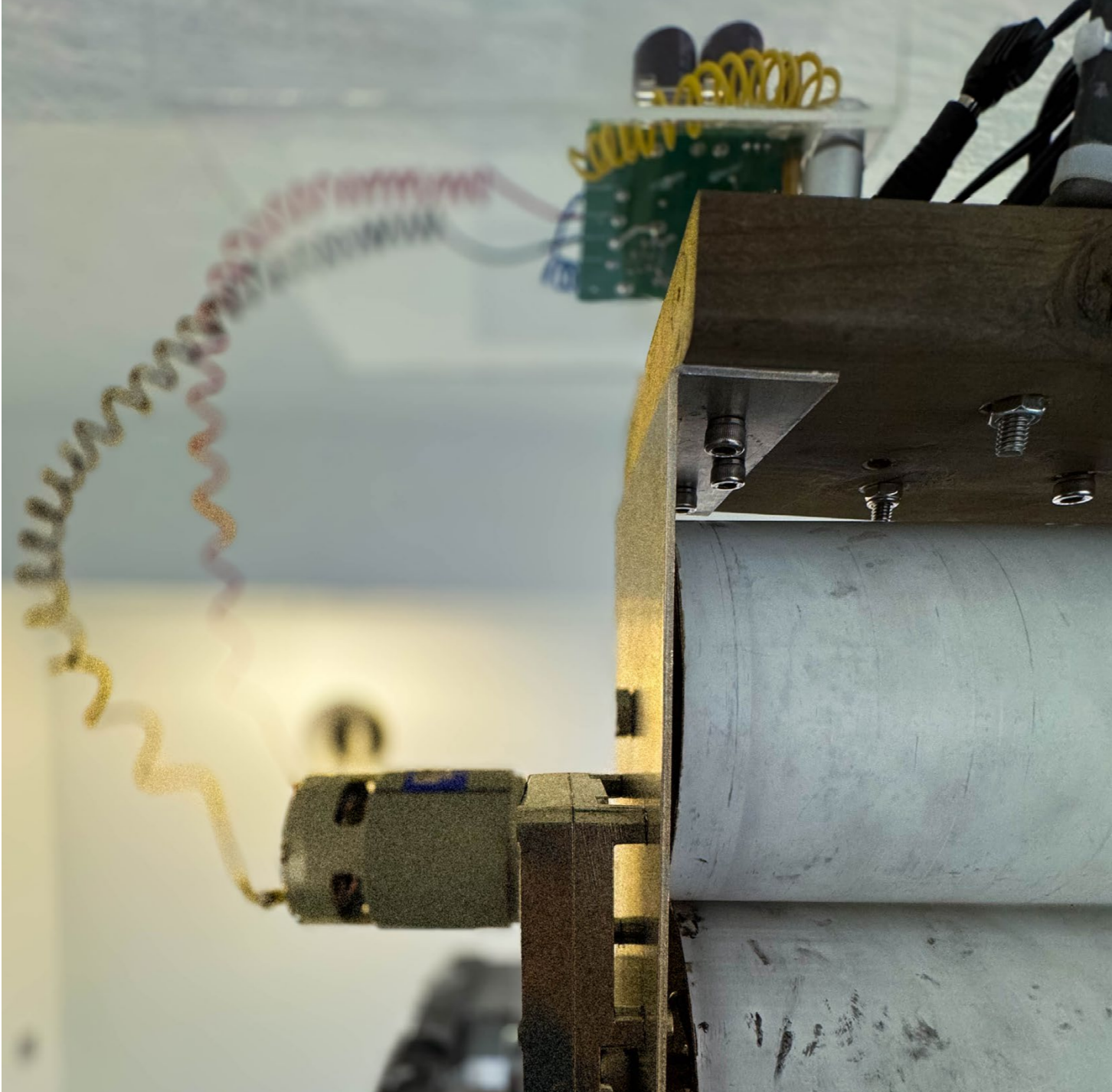


Fig. 27; Close up views of motor and pcb and rollar

3.5 Sonic Component: Enhancing Interconnectedness

The sonic component of “Echoes of Resilience” serves as another layer in the work, enhancing the viewer’s experience. As the motor makes the paper glide against the charcoal the sound of that moment of interaction when the paper hits against the charcoal and the slight sound of the motor whirring is reflecting the relationship of the natural and human world. The sound of the motor whirring reminds us of our destructive presence. And for me when the paper brushes against the charred branch crushing the small charcoal particles it makes a sound that is similar to the fire. The auditory landscape mirrors the evolving relationship between humans and carbon, creating a sensory dimension that resonates with the visual and kinetic elements. This auditory dimension emphasizes the symbiotic relationship between the material world and the creative process.

Fig. 28; Close up view of installation at Galleri Seidduken





Fig. 29; Close up view of installation at Galleri Seilduken

Chapter 4: Navigating Climate Change, Ephemeral Landscapes, and Human Impact in Artistic Exploration”

The term “ephemeral landscape” means the transient nature of the landscape. “Ephemeral” means short-lived, passing, fleeting, brief, momentary, or temporary. There are two kinds of ephemeral landscape - one in which human actions are the cause of it such as urbanization and the other one where natural phenomena are the cause of it such as sand dunes. In my work such as Cube Insect, and Ephemera these are visible.

Climate change is another intersection in my art practice. Immaterial and intangible, light and sound serve as the bedrock for my spatial installations, where the goal is not just observation but the heightened perception of the viewer.

My experiences are rooted in the landscapes of my childhood in rural Bengal, surrounded by rivers, lakes, and water bodies. I have first-hand experience of the changing landscape of my village Gurpara which I visited after 4 years in 2023. I noticed that the small water bodies like ponds (*pukur*) that had existed before now have vanished and buildings have been built. I have also seen them dry up due to water shortage.

4.1 Ephemeral landscapes

Art is a powerful tool for communication. And artists have used art since olden times to express their concern about global issues. Over the years artists have engaged with the natural world like that of the Land artists of 1960’s and 70’s emphasizing the relationship between the artwork and its surroundings. Some of these works were created to interact with the natural elements, such as sunlight, wind, and water. They tried to convey the ephemerality of nature through materials gathered from nature itself. Documentation was an important part of the process in order to record the ephemerality captured in the moment. Artists like Andy Goldsworthy wanted to strike a balance between human relationships with nature. “Ephemeral work made outside, for and about a day,” the artist explains, “lies at the core of my art. Later on, artists like Olafur Eliasson recontextualized natural phenomena through light, sound, and immersive installations.



Fig. 30; Installation viewg from Kunstneres Hus

4.2 Climate Change

The Conference of the Parties (COP)⁸ is an annual gathering under the United Nations Framework Convention on Climate Change (UNFCCC)⁹ where countries come together to discuss international climate policy. In December 2018 in Katowice, Poland COP24 took place. It was a significant event to combat climate change. Climate change has become an increasingly prevalent theme in contemporary art as artists grapple with the environmental challenges facing the planet. In one notable instance, Ai Weiwei collaborated with Danish-Icelandic artist Olafur Eliasson on an art project titled “Ice Watch.” This installation involved transporting large ice blocks from Greenland to various cities around the world, where they were displayed in public spaces. The melting ice served as a poignant symbol of climate change’s impact, urging viewers to confront the reality of global warming.

Isabelle Stengers’ essay- “An Ecology of Practices” provides a valuable framework for environmental artists to navigate the challenges posed by capitalism, resist destructive forces, and cultivate sustainable creative ecosystems. By embracing the decision-making power inherent in artistic practice, rejecting the justification of losses, and constructing new practical identities, environmental artists can contribute to a transformative and interconnected future for the arts, free from the constraints of destructive capitalist ideologies. The essay serves as a catalyst for introspection, encouraging a reevaluation of creative habitats, a confrontation of fears related to external judgments, and an active engagement in shaping the evolving landscape of artistic practices.



Fig. 31; Ice Watch- Olafur Eliasson., 2014;Bankside, outside Tate Modern, London, 2018

⁸ The COP is the supreme decision-making body of the Convention. All States that are Parties to the Convention are represented at the COP, at which they review the implementation of the Convention and any other legal instruments that the COP adopts and take decisions necessary to promote the effective implementation of the Convention, including institutional and administrative arrangements.

⁹ The United Nations Framework Convention on Climate Change is the UN process for negotiating an agreement to limit dangerous climate change.

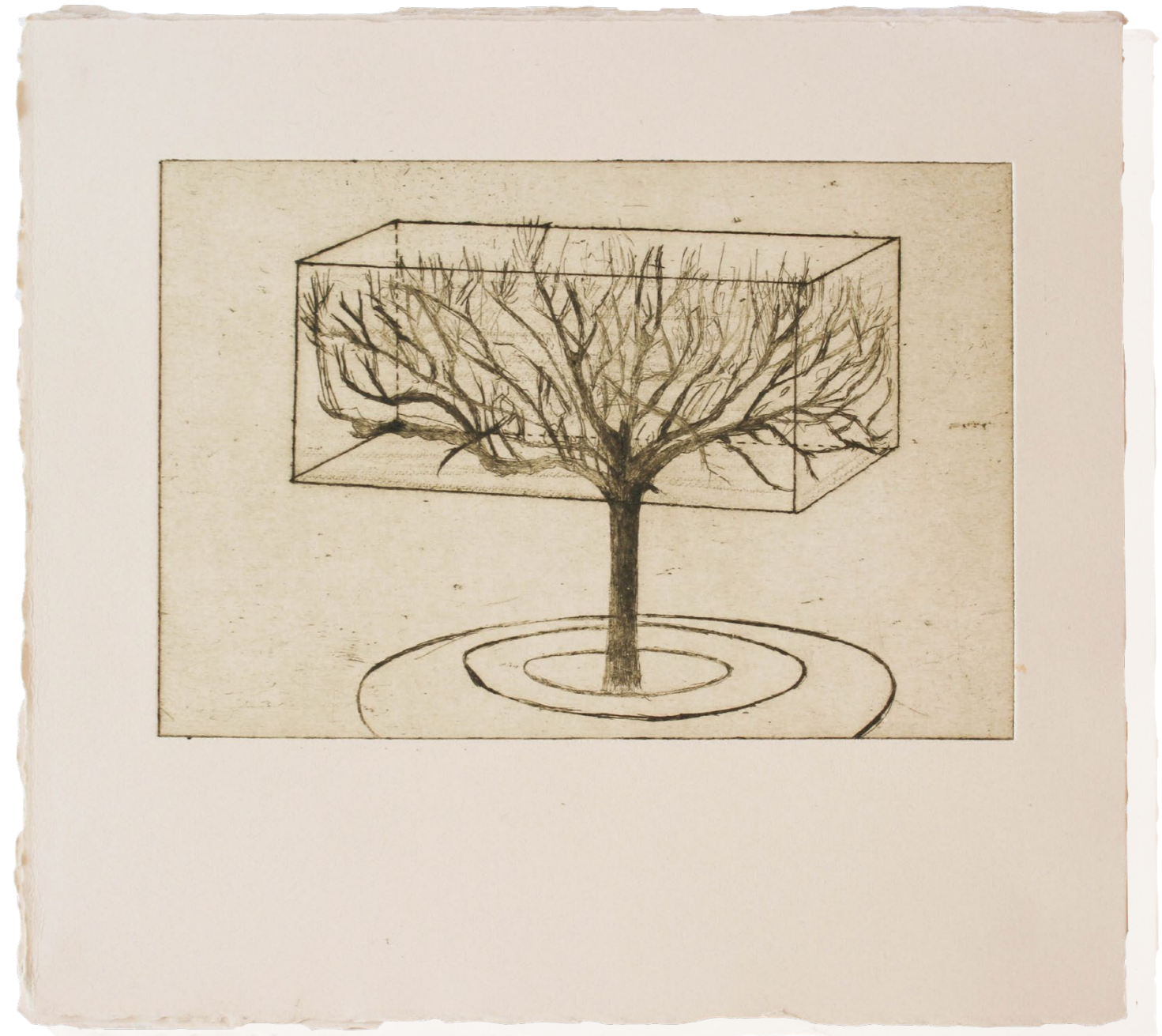


Fig. 32; Drypoint inspired form tree shaping in cubical forms from the city Caen, France, 2022

At present, I am continuously engaged with carbon as a material and also as a subject of interrogation through the mediums of drawing, sonic, and kinetic installations. The very material that served as a medium for the earliest expressions of human creativity is now tied to modern life, with extreme consequences for the natural world. By bringing these elements together, my projects trigger viewers to contemplate the relationship between nature and technology, the ancient and the contemporary.

The process of my works is mostly the reflection of environmental change and along with that how our sensibility and scenes change every time. One of my ongoing projects, Cube Insect, is inspired by the tree shaping basically cubical forms; how we expand human influence in nature, we try to shape every aspect of the living organism into very structural forms that evolved from human brains. And how we are invalid in nature and making the cubical form and while I am talking about this I am even sitting inside a cube. And for my work, I tried to bring back those elements that we are losing. So I tried to manifest life through the help of 3 of the five elements, that is, Pancha Bhuta. Pancha Bhuta consist of five great elements, also five physical elements, is a group of five basic elements, which, according to Hinduism, is the basis of all cosmic creation. These elements are: *Prithvi-Earth, Jala-Water, Agni-Fire, Vayu-Air, Akasha-Space/Atmosphere/Ether*. These elements have different characteristics and also account for different faculties of human experience. In Indian philosophy, the human body is considered to be made of these five elements.

Chapter 5 : Carbon

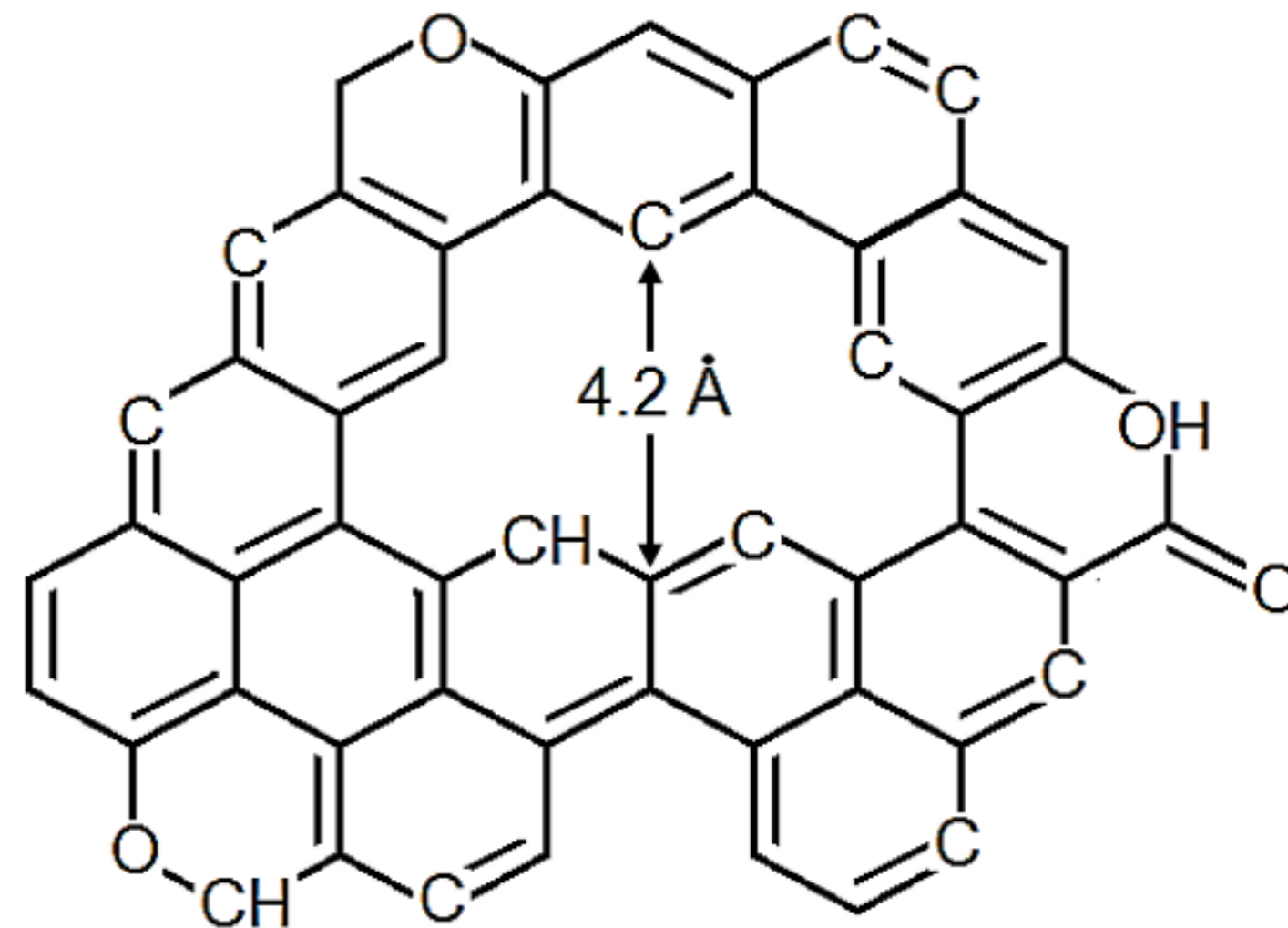


Fig. 33; Molecular structure of charcoal

5.2 Carbon as a Threat

5.1 Carbon as a Material

Carbon is the life force. It is present in our DNA's, RNA's, Proteins, carbohydrates, and lipid membranes. This hard, soft, shiny, sooty material is a versatile element. Carbon exists in several allotropes¹⁰, each with distinct properties which include- Diamond, Graphite, Fullerenes, and Graphene. It is the critical ingredient to life and living. Carbon is a fundamental building block of organic molecules and is the basis for all known life on Earth. It has been present in the earth's history since the beginning we know. From machinery to medicine to architecture to art. Carbon is visible in everything humanity has built.

¹⁰ Allotrope: each of two or more different physical forms in which an element can exist. Graphite, charcoal, and diamond are all allotropes of carbon.

Carbon as a life-creating element is also a paradoxical element. It is critical to life yet capable enough to suffocate it. Human intervention into this nature's element has posed a threat to humans only. Some of the impacts of elevated carbon levels are irreversible or have long-lasting effects. For instance, the loss of biodiversity and ecosystems, such as coral reefs and tropical forests, may be irreversible on human timescales. Additionally, the melting of ice caps and glaciers contributes to sea-level rise, which persists for centuries, threatening coastal communities and infrastructure. With the rise of man's needs there is a rise of carbon as well posing a threat to the ecosystem. I believe everything starts from the personal level until it becomes a global problem. Black carbon is an air pollutant caused by incomplete combustion of fossil fuels. Due to the presence of the black carbon there has been an increase in the cardiovascular and respiratory diseases. In India according to a survey done, people born and brought up in Delhi (the capital city) have black-coloured lungs.

The project Echoes of Resilience reflects an acute awareness of the cyclical nature of carbon, seamlessly weaving together the historical significance of carbon-based mark-making in human history with the contemporary implications of carbon emissions on our planet. By visually articulating these connections, I invite the audience to contemplate the intricate relationship between carbon, climate change, and the resilience of nature.

5.3 Carbon's Dual Nature: Creator and Disrupter through the work 'Echoes of Resilience'

My recent projects present carbon as a pollutant or a threat and also seek to convey its inherent role as a life-giving element intertwined with the very fabric of existence. The urgency and impact of environmental changes, particularly those linked to carbon emissions and climate change, are visually conveyed in the work. This visual representation becomes a powerful tool to evoke emotional responses, transcending scientific data to create a visceral and emotive experience for the audience.

I navigate through visual landscapes altered by climatic shifts. Familiar scenes are abstracted, reflecting the disorientation and transformation experienced by both nature and humans. My work confronts the viewers towards environmental awareness, prompting viewers to confront the gravity of the challenges posed by climate change.



Fig. 34; Coal mines in Jharkhand, India



Fig. 35; Installation viewg from Kunstnernes Hus

Chapter 6: Carbon in Relation to Mark-Making in Times of Environmental Changes

6.2 Using mark-making as a process to capture Emotions, Movement, and Narratives

Marks possess the ability to capture a myriad of elements within a single image, making it a language for expressing emotions, movement, and narratives. These can be captured with the strokes, whether bold and sweeping or delicate and precise. These marks are imbued with my state of mind, reflecting an immediate response to the subject or a deeply felt emotion.

Furthermore, marks are not static; they inherently carry a sense of movement. Each stroke captures the energy and dynamism of the hand in motion. In this way, mark-making becomes an expressive form that conveys not only the physical movement involved in its creation but also the emotional movement and narrative unfolding within the artwork. The strokes become a visual language, articulating the fluidity of time and emotions.

6.1 What is mark-making?

Mark-making is the means of freezing moments in time or an impression, this could be physical or mental marks. Mark-making, as a drawing technique, involves the deliberate creation of strokes, lines, or impressions on a surface. It is a process characterized by spontaneity and intentionality. This spontaneity lends mark-making a unique quality, allowing it to serve as a visceral and expressive form of visual communication.

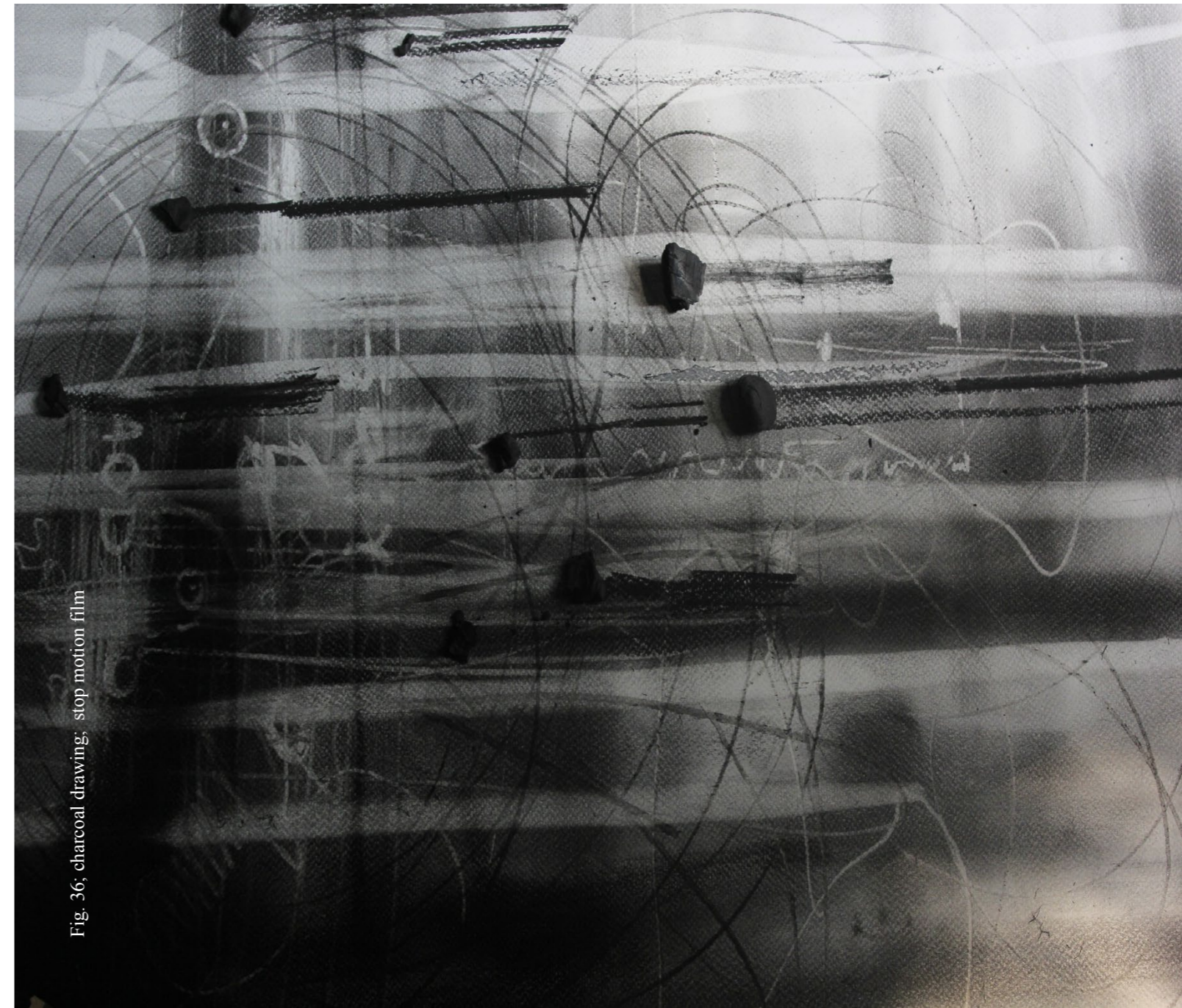


Fig. 36; charcoal drawing; stop motion film

6.3 Marks as a Visual Record

In my art practice, the marks on paper by using carbon(charcoal and graphite) transcend into aesthetic expressions and evolve as a visual image of our ever-changing world. These marks show the swift shifts in our environment as a metaphor. These carbon-laden marks stand as an instance of deposition to the impermanence inherent in landscapes and ecosystems. Each layer's stain on the paper serves as a powerful record, encapsulating the fragility of our surroundings and the resilience to navigate through the constant flux of ecological realities.

The deliberate choice of using carbon as my medium weaves a metaphorical significance, embodying the balance between fragility and strength that is present in nature. Similar to carbon's capability to endure over time, the environment also demonstrates its remarkable capacity for durability. The marks that I create form

a visual representation of this delicate equilibrium, emphasizing the complex interactions within the ecosystem. Each layer of stain becomes reminiscent of the time gone by, marked by human impressions. Beyond their expressive immediacy, marks play a crucial role in constructing a visual timeline within a single image. Each mark contributes to the unfolding of a narrative, revealing growth, a moment, or a feeling. It's also a visual record of the experiences gone by the moments. As viewers engage with the artwork, they are invited to traverse this visual timeline, witnessing the layers of meaning embedded in the marks and gaining insight into my temporal and emotional journey.



Fig. 37; De-installationview and the result of 4 days of drawing from Kunstneres Hus

6.4 Testament Witness to Fragility and Resilience

In essence, marks with carbon function as a profound testimony to the fragility and resilience of the environment. Through the medium of mark-making, I weave a narrative that acknowledges the vulnerability of ecosystems in the face of environmental changes while celebrating the inherent strength and adaptability of the natural world. How much ever we vomit destruction over nature. The natural world is always resilient enough to fight back and recover. I and every one of us on Earth have witnessed of how the COVID pandemic led nature to heal by itself untouched by humans. Nature can never be defeated. An abandoned plot of land will always have something called nature growing on it and taking over the human presence.



Fig. 38; Shajarat-al-Hayat (Tree of Life) – Bahrain

Conclusion:

My journey through experimentation with visual art, technology, and environmental consciousness has been about the exploration of how the power of art can shape perceptions, provoke thought, and foster connections. From delving into the ephemeral landscapes of nature to exploring the profound implications of carbon as both a life-giving force and a disruptive element, each chapter of my artistic exploration has unveiled layers of meaning, raised questions, and initiated a dialogue about our relationship with the world around us.

Through immersive installations, experimental drawings, and interdisciplinary collaborations I push boundaries by merging art and science together. I aim to create visual compositions that go beyond traditional margins by combining natural and optical phenomena, providing synesthetic experiences that reflect and evoke emotions.

Throughout my practice, I have looked upon my research emphasizing the physical experience and the essential interconnectedness of all elements from different events around me, guiding me towards deeper insights into the intersections of art, technology, and environmental consciousness.

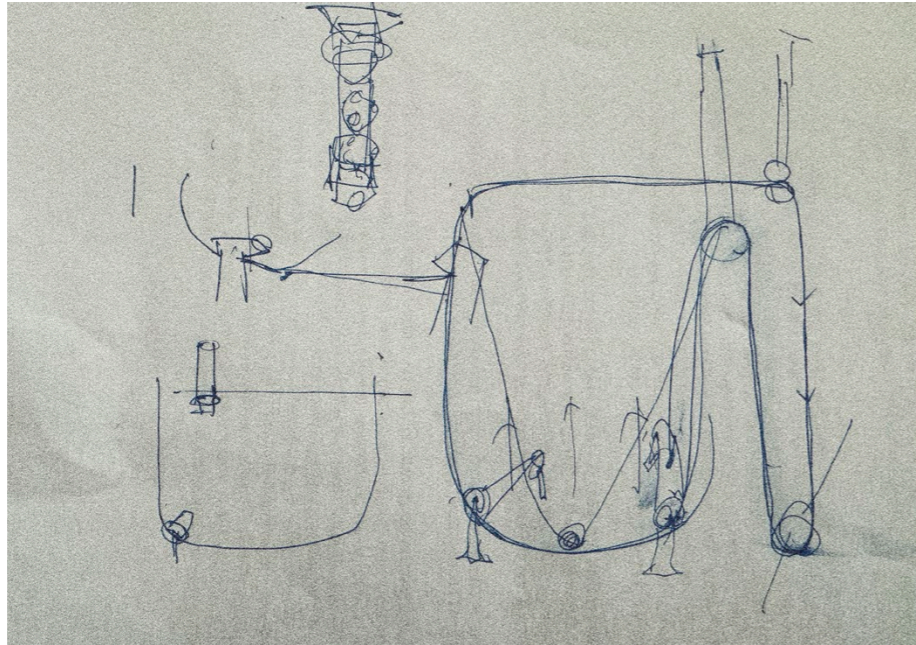
Art becomes a powerful tool for communication and reflection as we face the challenges of climate change and environmental degradation. My intention is to document how fragile or resilient our environment can be by examining our world's evanescent landscapes and the transformative powers of drawing. I hope that by doing this, I can make people realize how they are integral parts within a complex web that constitutes life. In times of uncertainty and change, art acts as a sign of faith in that it offers space for contemplation, bonding, and personal growth. Therefore, I am driven by an artistic spirit that evolves daily while keeping in mind that these boundaries must be stretched because they provoke thought, resulting in actions towards sustainability and interconnection among all beings.

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Bibliography:



Cover: Close up view of the charred tree at Galleri Seilduken, Oslo;
Photo credit: Debangona Paul

Fig. 1; Photograph from Ganga river;
Photo credit: Rajat Mondal

Fig. 2; Lens-cape (2019); Cloth,iron frame ,sketch book & three videos: 0:18,0:6, 0:16 min;12 x 6 x 7ft; installation view at TIFR,Hyderabad,
Photo credit: Rajat Mondal;
<https://vimeo.com/675679311>

Fig. 2; Lens-cape (2019); Cloth,iron frame ,sketch book & three videos: 0:18,0:6, 0:16 min;12 x 6 x 7ft; installation view at TIFR,Hyderabad,
Photo credit: Rajat Mondal;
<https://vimeo.com/675679311>

Fig. 4, Plumbago(2023); graphite dust , paper, amplifire, speakers ; 152 x 90 cm; Photo credit: Rajat Mondal

Fig. 5; Plumbago(2023); graphite dust , paper, amplifire, speakers ; 152 x 90 cm;
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Fig. 6; Photograph from studio;
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Fig. 7; lucid (2019); plastic film, 7 channel video, projector, Petri Dishes, Beakers, Fiberglass, 4.1 channel sound, 2 Air conditioner;
<https://vimeo.com/675679908>

Fig. 8; Lucid (2019); plastic film, 7 channel video, projector, Petri Dishes, Beakers, Fiberglass, 4.1 channel sound, 2 Air conditioner;
<https://vimeo.com/675679908>

Fig. 9; Ascension- Bill Viola(2000); The Museum of Fine Arts, Houston;
https://www.thewadsworth.org/ngg_tag/viola/

Fig. 10; Storm King Wall -Andy Goldsworthy. (1998), Storm KingArt Center, United States;
<https://www.flickr.com/photos/obsessivephotography/49493703658>

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<https://www.artforum.com/events/pierre-huyghe-10-208387/>

Fig. 12; Ephemera(2020); 3 Transparent layers, Video 1.53min, projector; 214cm x 152cm
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<https://youtu.be/efBvzoVX0No>

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<https://vimeo.com/675680439>

Fig. 16, Interim 2.0(2022); wood, mesh fabric, steel, generative video, filled recorded sound, 4k projector, 4.1 sounda;
<https://vimeo.com/765899700>

Fig. 17, Interim 2.0(2022); wood, mesh fabric, steel, generative video, filled recorded sound, 4k projector, 4.1 sounda;
<https://vimeo.com/765899700>

Fig. 18; Tremor(2023); wooden structure, Speakers, dust particles, generative light, filled recorded and modulated sound,plaxiglass;
<https://youtu.be/efBvzoVX0No>

Fig. 19; Echoes of Resilience: Nature’s Unyielding Spirit(2024); charred tree, paper, motors, Rpi control Unit, roller;
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Fig. 20; Documentation of collecting tree near Sognsvann lake, Oslo

Photo credit: Milton Mondal

Fig. 13; Cube Insect(2023); plexiglass, polyester phome, stroboscope, custom sound, exhaust fan,RPi control unit;
<https://vimeo.com/850596524>

Fig. 22; Documentation of transporting tree by tram in Oslo;
Photo credit: Milton Mondal

Fig. 23; Documentation of the installation of Echoes of Resilience: Nature’s Unyielding Spirit at Galleri Seilduken, Oslo;
Photo credit: Debangona Paul

Fig. 24; Close up view of the charred tree at Galleri Seilduken, Oslo;
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Fig. 25; Close up view from installation of Echoes of Resilience: Nature’s Unyielding Spirit at Galleri Seilduken, Oslo

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Fig. 30; Installation view of Echoes of Resilience: Nature’s Unyielding Spirit from Kunstnernes Hus, Oslo

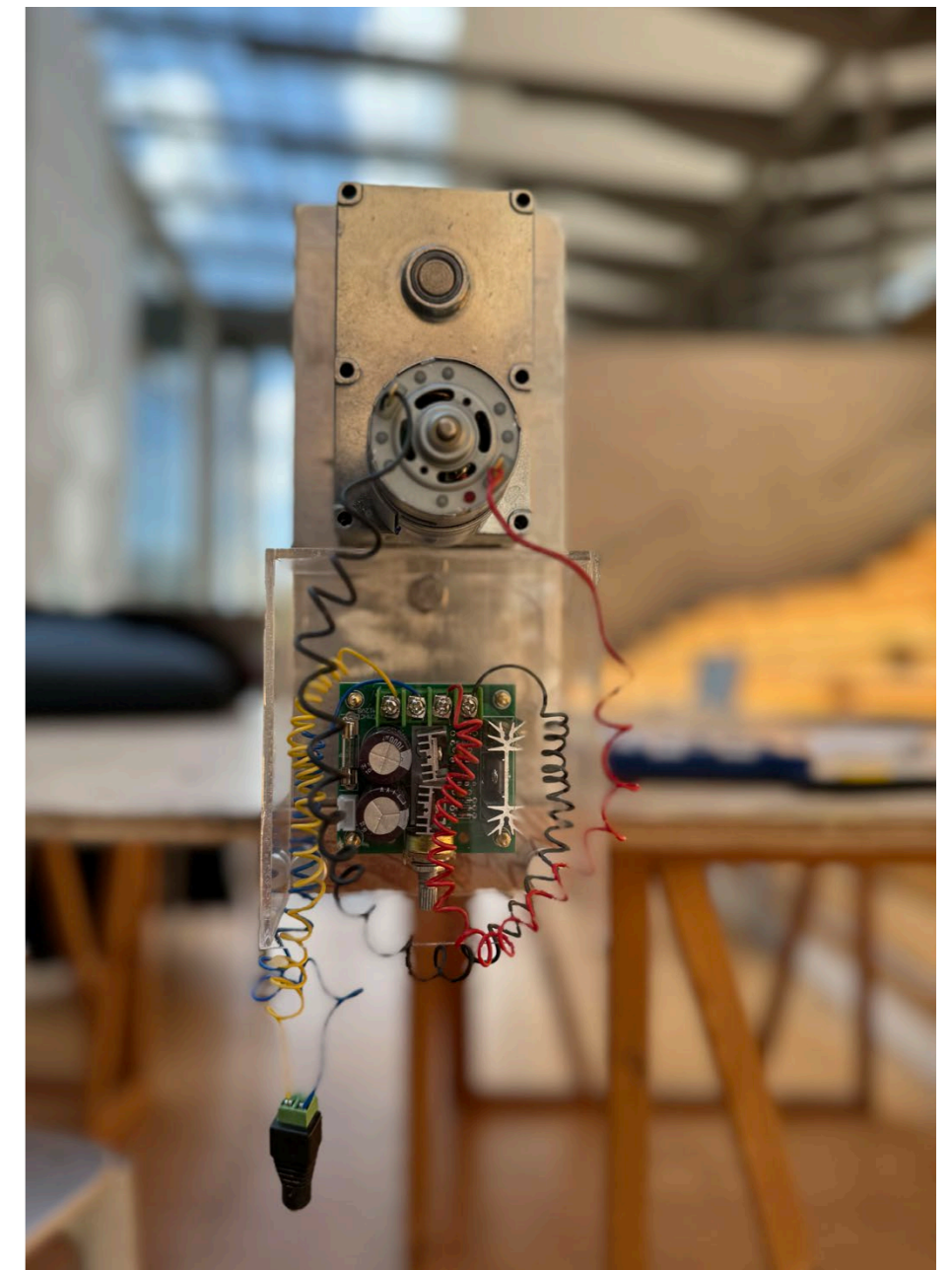


Fig. 31; Ice Watch- Olafur Eliasson., 2014;Bankside, outside Tate Modern, London, 2018
<https://publicdelivery.org/olafur-eliasson-ice-watch/>

Fig. 32; Drypoint inspired form tree shaping in cubical forms from the city Caen, France, 2022

Fig. 33; Molecular structure of charcoal
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Fig. 34; Coal mines in Jharkhand, India
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Fig. 37; De-installation view Echoes of Resilience: Nature’s Unyielding Spirit of and the result of 4 days of drawing from Kunstnernes Hus

Fig. 38; Shajarat-al-Hayat (Tree of Life) – Bahrain
<https://www.atlasobscura.com/places/tree-of-life>

Backcover: Photomontage

References:

Tilley Christopher Y and Kate Cameron-Daum. 2017. *An Anthropology of Landscape : The Extraordinary in the Ordinary*. London: UCL Press.

Bill Viola. 1997. New York Paris: Whitney Museum of American Art ; Flammarion.

Robert Morris : *Blind Time Drawings 1973-2000* ; [on the Occasion of the Exhibition “Robert Morris” Centro Per L'arte Contemporanea Luigi Pecci Prato February 26 - May 29 2005]. 2005. Göttingen: Steidl.

Isabell Stengers, “Introductory Notes on an Ecology of Practices,” *Cultural Studies Review* 11, no. 1, special issue on Desecration (2005): 183–96.

Decolonizing Nature : Contemporary Art and the Politics of Ecology. 2016. Berlin: Sternberg Press.

Ina Blom, “And Follow It”. *Straight Lines and Infrastructural Sensibilities*, *Critical Inquiry* (Vol. 45, No. 4, Summer 2019)

[https://www.unep.org/events/conference/24th-conference-parties-united-nations-framework-convention-climate-change-cop24#:~:text=24th%20Conference%20of%20the%20Parties,Convention%20on%20Climate%20Change%20\(COP24\)](https://www.unep.org/events/conference/24th-conference-parties-united-nations-framework-convention-climate-change-cop24#:~:text=24th%20Conference%20of%20the%20Parties,Convention%20on%20Climate%20Change%20(COP24))

Astrida Neimanis, “Introduction: Figuring Bodies of Water,” in *Bodies of Water. Posthuman Feminist Phenomenology* (London: Bloomsbury, 2017), 1–26

Christina Sharpe, *In the Wake: Blackness and Being* (Durham & London: Duke University Press, 2016), 198-256

<https://news.sky.com/story/cop26-artist-and-activist-ai-weiwei-says-everyone-needs-to-take-a-stand-on-climate-change-12453453>

Astrida Neimanis, “The Sea and the Breathing,” *e-flux* May 2020

Zen Mind Beginner’s Mind (version 50th anniversary edition). 2020 50th anniversary ed. Boulder Colorado: Shambhala.

Cheetham Mark A. 2012. *Remembering Postmodernism : Trends in Canadian Art 1970-1990*. 2nd ed. Don Mills Ont: Oxford University Press.

The Heartbeat of Trees Embracing Our Ancient Bond with Forests and Nature. 2022. London: William Collins.

Representing Nature: Art and climate change author(s): Malcolm Milesi, Source: *Cultural Geographies*, January 2010, Vol. 17, No. 1 (January 2010), pp. 19-35

The Circa Interview - Andy Goldsworthy: *Touchstones*, Author(s): Andy Goldsworthy and Marian Lovett, Source: *Circa*, Winter, 1995, No. 74 (Winter, 1995), pp. 43-47

Ephemeral Knowledge in the Visual Ecology, Author(s): James W. Marcum, Source: *Counterpoints*, 2006, Vol. 231, AFTER THE INFORMATION AGE: A DYNAMIC LEARNING MANIFESTO (2006), pp. 89-106

Philosophy-A Short History3 Authors:Alina Feld and Gabriel Camacho p.44 Immanuel Kant, Experience, and Reality

